Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly. Price 1s.

OCT 19 1927
Medical Lib.

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—14TH YEAR. SYDNEY: SATURDAY, SEPTEMBER 10, 1927. No. 11.

'BYNIN' AMARA
Trade Mark

A POTENT TONIC

'BYNIN' AMARA is of special value in neurasthenia, particularly when associated with low blood pressure, anaemia and atonic dyspepsia; in convalescence it gives that impetus which often enables the system to overcome the aftermath of disease and to recover completely.

COMPOSITION.

Quinine Phosphate	1½ gr.
Iron Phosphate	2 ..
Nux Vomica Alkaloids *equal to Strychnine*	¼ ..
'Bynin' Liquid Malt	1 oz.

DOSE: 2 to 4 fluid drachms in water twice or thrice daily after meals.

Further particulars and free sample will be sent on request.

ALLEN & HANBURYS (AUSTRALASIA) LTD.
13 MARKET STREET - - - - SYDNEY, N.S.W.

AFTER a careful investigation, the Analytical Department of "The Medical Journal of Australia" reported concerning Arnott's Biscuits:

"They are carefully prepared and the standard of cleanliness in the factory is of a high order.

"Essentially biscuits may be regarded as suitable food for children and adults."

Enticing richness of flavour distinguishes

Arnott's Scotch Shortbread Fingers

Analysed by THE MEDICAL JOURNAL OF AUSTRALIA.

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—14TH YEAR. SYDNEY: SATURDAY, SEPTEMBER 10, 1927. No. 11.

Authors of articles submitted for publication are requested to read the following instructions and to comply with them.

All articles must be typed with double or treble spacing. Carbon copies should not be sent. Abbreviations should be avoided, especially those of a technical character at times employed in ward notes. Words and sentences should not be underlined or typed in capitals. The selection of the correct type is undertaken by the Editors. When illustrations are required, good photographic prints on glossy gaslight papers should be submitted. Each print should be enclosed in a sheet of paper. On this sheet of paper the number of the figure and the legend to appear below the print should be typed or legibly written. On no account should any mark be made on the back of the photographic print. If no good print is available, negatives may be submitted. Line drawings, graphs, charts and the like should be drawn on thick, white paper in India ink by a person accustomed to draw for reproduction. The drawings should be large and boldly executed and all figures, lettering and symbols should be of sufficient strength and size to remain clear after reduction. Skiagrams can be reproduced satisfactorily only if good prints or negatives are available. The reproduction of all illustrations but especially of skiagrams entails the sacrifice of time and energy and is expensive. Authors are expected to take a corresponding amount of trouble on the preparation of their illustrations, whether skiagrams, photographs, wash drawings or line drawings. The references to articles and books quoted must be accurate and should be compiled according to the following scheme. The order should correspond to the order of appearance in the article. The initials and surnames of the authors, the full title of the article or book, the full (unabbreviated) title of the journal in which the article appears, the date of the issue (day, month and year) and the number of the first page should be given in this sequence.

Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES— PAGE.

"Obesity," by C. BICKERTON BLACKBURN, O.B.E., M.D. .. 354
"The Treatment of Exogenous Obesity," by H. H. BULLMORE, M.B., M.R.C.P. .. 356
"Obesity," by A. HOLMES À COURT, M.D., M.R.C.P. 358
"Some Biochemical Aspects of Obesity," by F. S. HANSMAN, M.B., Ch.M., M.R.C.P. .. 362
"Control of the Femoral Artery by Crile's Clamp in Thigh Amputations," by C. E. CORLETTE, M.D., Ch.M. .. 366

REPORTS OF CASES—

"Physometra Associated with Bacillus Welchii Septicæmia," by J. G. SLEEMAN, M.B., B.S. .. 367
"Lymphatic Œdema of the Forearm: Lymphangioplasty," by H. SKIPTON STACY, M.D., Ch.M. .. 368
"The 'Sanocrysin' Treatment of Pulmonary Tuberculosis," by W. COTTER HARVEY, M.B., Ch.M., T.D.D. .. 369
"Dislocation of Shoulder Joint with no History of Injury," by J. FORBES MACKENZIE, M.B., Ch.B. .. 369
"Jacksonian Epilepsy," by F. GUY GRIFFITHS, M.D. .. 370

REVIEWS—

Periodical Health Examination .. 370

LEADING ARTICLES—

References to Medical Literature .. 371

CURRENT COMMENT— PAGE.

"Insulin" and the Toxæmias .. 372
Retinal Petechiasis .. 373

ABSTRACTS FROM CURRENT MEDICAL LITERATURE—

Surgery .. 374

ÆSCULAPIUS IN MANHATTAN .. 376

BRITISH MEDICAL ASSOCIATION NEWS—

Scientific .. 378

THE SISTER MARSDEN TESTIMONIAL FUND .. 382

OBITUARY—

Edward Albert Officer .. 383
David Ernest Williams .. 383
James Samuel Frederick Barnet .. 383

CORRESPONDENCE—

Pyelitis .. 383
Post-Graduate Teaching or Mahomet and the Mountain .. 384

NAVAL AND MILITARY—

Appointments .. 384

BOOKS RECEIVED .. 386

DIARY FOR THE MONTH .. 386

MEDICAL APPOINTMENTS .. 386

MEDICAL APPOINTMENTS VACANT, ETC. .. 386

MEDICAL APPOINTMENTS: IMPORTANT NOTICE 386

EDITORIAL NOTICES .. 386

OBESITY.[1]

By C. BICKERTON BLACKBURN, O.B.E., M.D. (Sydney),
Honorary Physician, Royal Prince Alfred Hospital, Sydney.

THE subject of our debate tonight might appear to a casual thinker so simple as to be hardly worthy of so much attention, but it is actually a matter about which there is a great deal of obscurity. So much indeed is there about fat people that I do not understand, and about which I hope to learn from other speakers who are to present special aspects of this question, that I am gratified to feel that my function in introducing the discussion is rather to outline the problems to be dealt with than to attempt to solve them.

An initial difficulty about obesity is its definition. Dr. Anders who contributes the article on this subject in the latest edition of Osler's "Modern Medicine," supplies as synonyms, *lipomatosis universalis*, adiposity, corpulency, fatness and essays a definition of which the first sentence runs: "Obesity is a metabolic disorder in which there exists an anomaly of fat metabolism and characterized anatomically by an excessive amount of adipose tissue." Apart from the grammar this is open to the criticism that the word excessive is too vague for use in a definition, an essential quality of which is precision.

I find the greatest difficulty in determining what is a proper standard so that one can say that less is too little and more is too much—or obesity. It is a question about which the old adage *"tot homines, tot sententiæ"* may well be quoted, for standards vary according to age, social environment and race. The modern young society mother would be heroically enduring frequent liquid days had she half the measure of fatness that she applauds in her baby and sees with complacency on her middle-aged mother. In her eyes Venus of Milo is disgustingly fat. Among the Dutch and the Germans quite different standards are in vogue than among English-speaking people in the same walks of life, while among many African and Asiatic races from very early times a degree of fatness, especially among the women-kind, that we would regard as grossly excessive and disfiguring, has been looked upon as the hall mark of beauty.

There is a well preserved bas-relief on one of the walls of the beautiful temple of Der-al-bahari at Luxor in which the Queen of Punt is portrayed as what we would describe as extremely corpulent, having rolls of fat about the buttocks and thighs suggestive of endocrine disorder. Moreover at the present day no Egyptian woman of the middle or peasant class is pleasing to her husband unless fat and visitors to the spice market of the Muski in Cairo will find it thronged with women, many already obese according to our standards, purchasing spice mixtures guaranteed to add to their avoirdupois.

[1] Read at a meeting of the Section of Medicine of the New South Wales Branch of the British Medical Association on June 21, 1927.

Gladly leaving the exact framing of the definition to some other speaker, I will ask you to give your attention next to the consideration of what it is that leads to this difference in fatness between the lean folk and those whom they would dub as obese. No doubt the man in the street would say that the fat ones eat greater quantities or different kinds of food than the others, but Dr. Anders tells us that they have a metabolic disorder.

Now this is a very important issue and much of the value of our discussion will depend upon how we approach this aspect of the question. Though our recent great advances in knowledge of the biochemistry of metabolism and of the functions of the endocrine glands have taught us that some disorders of metabolism are associated with an adiposity disproportionate to the intake of food, we must beware of losing our balance. Apart from their unfashionable figures, do fat people appear to be people with disorders? Are they not rather the proverbially cheerful, happy and contented members of the community? I rather fancy that the Egyptian husband in encouraging a habit of obesity in his spouses is actuated by ideas akin to those that prompted Shakespeare's Julius Cæsar to cry "Let me have men about me that are fat" and again of the gaunt and plotting Cassius "Would that he were fatter." I would suggest then that generally speaking the laying on of fat is really the response of a well-ordered metabolism to a supply of nutriment in excess of what it needs to meet the daily output of energy. Surely the chief object in the storage is the provision of something the metabolism can fall back upon when the intake is insufficient? Were not this provision against a rainy day so important for the preservation of life one can imagine that our appetites would have served us as better guides as to our fuel requirements. The value of this convenient larder is evident all through animal and vegetable life. The sap hoarded in the trees against the winter has its counterpart in the fat of animals hibernating in the frozen ends of the earth while the fattening capacity of our domestic flocks and herds is utilized in providing much of the fat in our dietary.

One of the unfortunate results of the community life that is the mark of civilization is that with better organized storage of food the lean days of the primitive savage vanish in the case of many, so that if the appetite is not deliberately curbed there is a tendency to a steady accumulation of fat. In youth some check is kept on this by exercise, enabling more fuel to be completely combusted, but towards middle life, if the same intake continues, obesity tends to develope.

While it is probable that some stocks have retained the capacity better than others, yet on the whole it is probable that the man who despite a large appetite remains thin, is a man with a metabolic disorder. This is suggested by the fact that in less civilized communities where the labourer has no basic wage, one can usually distinguish the rich from the poor by their waist measurements. This was conspicuously brought to my notice one day last year when hunting for curios in Hong Kong.

As we wandered from the high-priced to the progressively cheaper shops, we were amused to note that the girth of the shopkeepers tended steadily to diminish. Here in Australia of course this does not apply to anything like the same extent, but the fiction is still maintained in newspaper cartoons contrasting the manual labourer with the capitalist.

If it were possible to decide what was the normal limit to the capacity for fat storage of an average metabolism, as it were, we might then define obesity as anything in excess of that, but unfortunately the fact that the limits vary so much according to the nature of the food supply would render classification on such a basis utterly impracticable.

With animals under normal conditions undue expansion is checked by the type of food available. Thus in the case of herbivora, their nutriment, herbage, is so bulky in comparison with the food value that it would be practically impossible for the animals to consume enough to render them inordinately fat, while, even though unlimited supplies of flesh food were available for the carnivora, it is probable that the metabolic difficulties in the way of readily building it up into fat would exercise a wholesome restraint. But under artificial conditions when the dietary is supplemented with food easily converted into fat such as grain and sugar, these animals develope into the typically obese counterparts of *homo sapiens*, familiar examples being the dairy-fed pig and the house dog. Among the Bataks, the indigenous population of the inland parts of Sumatra, the dog is just as much a regular article of diet as the sheep is with us. These table delicacies are there fed mainly on rice and those seen for sale in the markets, are as sleek and fat as the wheezy pug dogs so often seen panting after their mistresses in our suburban residential areas.

While stressing what I may call this normal aspect of adiposity, I am not suggesting that disorders of metabolism do not ever play a part in conducing to obesity. Under this heading would be included those who become fat on the same diet and with approximately the same expenditure of energy as the average person who does not. Unfortunately the necessary data are often difficult to obtain owing to the fact that the fat are usually very unreliable in the accounts of their diet, the one day of deprivation looming larger in their memories than the six of indulgence. An instance of this kind quite recently came under my notice in the case of a lady of 120 kilograms (nineteen stone) who, consulting me as to how to reduce her weight, disarmed me of therapeutic suggestions by supplying me with her daily diet scale which I calculated at about 1,000 calories. Only a week or two later, however, a relative artlessly mentioned her as a most prodigious eater!

Genuine cases may be expected to result from any disturbance in the body leading to a lowered metabolic rate or from some abnormality in the metabolic process resulting in an abnormal proportion of the foodstuffs being converted into fat. It is generally held that alcohol in excess has at times something of this effect, tending to interfere with the normal nutritional processes of the cells. Certainly heart muscle, liver and other cells often contain an unusual amount of fat, while certain alcoholics, especially beer drinkers, tend to grow abnormally corpulent. The question is, however, complicated by our lack of knowledge as to how far the alcohol itself is oxidized into fat and also by the fact that beer in particular contains a fairly large amount of carbohydrate so that the potential fat-producing intake is not so small as the deficiency in ordinary food might at first sight suggest.

The unhealthy fatness of some anæmic patients is thought by some to be due to a defect in the normal oxygenating processes, but it must not be forgotten that the anæmia itself tends very greatly to limit the expenditure of muscular energy, so that if the appetite is good, there is a big margin for storage.

When we consider patients with a lowered basal metabolism, we are on firmer ground. It has been firmly established that this condition is found in certain pathological states of the endocrine glands, but that these glands are the sole arbiters of the metabolic rate has not by any means been determined. I would like one of the speakers tonight to tell us whether any observations have been made in regard to these glands in hibernating animals and whether there is any evidence that their secretory activity is in abeyance during the winter.

In a loose kind of way thyreoid deficiency, certain pituitary disorders and absence of testicles or ovaries have come to be spoken of as causing obesity, with an almost implied suggestion that the glands themselves control the normal destiny of ingested foodstuffs.

No doubt Dr. Hansman who is to speak on this special aspect, will explain to you exactly how these glands or the lack of them acts, but I would remind you that in the myxœdematous patient, for instance, on the same diet as his fellows, there is more left over for storage so that if his metabolism is otherwise normal, he may be expected to grow fat. But on the other hand we must not forget that if his storage power is poor, as with other lean people, or of course if he has a poor appetite, he does not get fat. In some of these patients indeed the thyreoid deficiency itself seems to interfere with the appetite and I recall one young woman of twenty-three weighing 31·5 kilograms (five stone) with pronounced emaciation and anorexia, but otherwise exhibiting the typical subthyreoid syndrome, who quickly regained her appetite when put upon increasing doses of thyreoid extract, and who gained 12·6 kilograms (two stone) in weight in two months.

Probably in most patients with hyposecretion of the posterior lobe of the hypophysis there is a coincident thyreoid deficiency, so that here also there is more left over for storage (as a matter of fact most of the patients I have seen have had ravenous appetites), but the retention of or reversion to the infantile type determines the particular sites for the fat deposition.

The great stature and the adiposity of the eunuch have become so proverbial that it would seem as if we were at least on firm ground in holding that

castration disturbs the endocrine balance in some way that leads to the storage of fat. But when we investigate the case of the lower animals it appears that the question of food supply is at least largely the determining factor in the adiposity apart from its distribution. Thus in the case of sheep, cattle and horses the castrated in the same environment are not noticeably fatter or larger than the sexually perfect animals. Actually the rams, bulls and entires that we see, are usually fatter and bigger than the corresponding unsexed species, but this may be largely due to the fact that these males, being kept for breeding purposes, are usually better fed and cared for than the others. An example that might be quoted on the other side is the altered domestic cat. Unquestionably such cats are often large and very fat, but generally their case from the food and exercise point of view is on all fours with the unchanged males just discussed. The pick of the litter as a kitten and brought up as a domestic pet, it is usually over-fed and spends the time in sleeping that its unaltered brother devotes to nocturnal ramblings and combat. The eunuchs of the Arabian Nights were in much the same position. We may expect that, destined to act as guardians of a harem or for some similar post, children giving promise of more than ordinary stature would be selected. Thereafter they would be likely to have an easy life with a liberal diet supplemented largely, if we read aright, with sweetmeats given as bribes for little favours by their charges. As a contrast it is worth recalling to your notice the Skoptsy, mentioned by Ossendowski in the account of various ignorant superstitious Russian sects given in his book "In the Shadow of the Gloomy East." These Skoptsy, he tells us, voluntarily emasculate themselves from an extraordinary conviction that by so doing they are delaying the advent of antichrist. He makes no reference to unusual stature, though he mentions that often one or more of the children in a family are selected for the rite, but describes them as stout, womanly-shaped men, with yellow, faded, sleepy, hairless faces, a description savouring strongly of hypothyreoidism. As he mentions that they are largely a banking fraternity, we may suppose that they are better fed than the average Russian.

Whatever divergence of opinion there may be as to whether becoming obese is in itself a disease, I think we shall all agree that the person who has grown cumbrously fat and remains so has a more hazardous future than his fellows. In such people there is a constant intake of more nutriment than is needed for the daily requirements. It is curious to note how readily a vicious circle is established and I have often been told by grossly obese patients that they, owing to their size, require more food than other people and I was interested to note in the daily press only yesterday that "Teddy," the famous 151 kilogram (twenty-four stone) American jazz player, who has spent the last week-end in an English gaol for not paying his income tax, had claimed exemption on the ground that on account of his bulk he required two pounds of beefsteak for his lunch.

Thus, quite apart from the question of the hampering of the functions of organs by the mass of fat packed around them, we may expect that the constant presence in the circulation of the enormous excess of waste products resulting from the diet will lead to deleterious effects upon the assimilating and excretory organs as well as the vascular system itself. My own clinical observations have led me to the opinion that this is at least one of the causes of hyperpiesia and subsequent vascular degeneration. I could quote many instances in which in adipose patients with high blood pressures but without definite vascular degeneration the simple adjustment of the diet to about the estimated actual metabolic requirements has been followed by a pronounced and persistent fall in blood pressure and general improvement in health.

How far the deposited fat itself hampers muscular and glandular activity and thus tends to shorten life is hard to determine, as it is so difficult to separate this aspect from the one just mentioned. Certainly all the famous historical fat people died at a comparatively early age. The most obese person of whom I have seen any record was one Daniel Lambert, who died in England in 1809, aged thirty-nine, weighing 332·5 kilograms (seven hundred and thirty-nine pounds). It is recorded that he was 284·5 centimetres (three yards four inches) round the waist and ninety-four centimetres (a yard and an inch) round the calf. To misquote the Scriptures, one might almost say that it is easier for a camel to go through the eye of a needle than for a fat man to enter the seventh decade. Almost, but not quite; for I remember treating for some years a man of 123·5 kilograms (nineteen stone) who refused to diet, but lived to be seventy-seven years of age.

Our deliberations will not be complete without a full consideration of the question of treatment. As I have already over-stepped my time limits, I will leave this field entirely open to Dr. Bullmore who is to follow me, merely mentioning in conclusion that I know no class of patients from whom it is more difficult to secure honest, whole-hearted cooperation.

THE TREATMENT OF EXOGENOUS OBESITY.[1]

By H. H. BULLMORE, M.B., M.R.C.P. (Edin.),
Honorary Physician, Saint Vincent's Hospital, Sydney.

I HAVE never seen a man who was engaged in hard manual labour, a fat man. Is it because fat men do not become labourers or because labourers do not become fat men? They do, when they give up hard exercise, very often. I do remember one obese man who was engaged in continuous hard physical labour, but his myocardium did not tolerate it for long. It is a truism to say that continuous hard physical exercise and fatness are incompatible or

[1] Read at a meeting of the Section of Medicine of the New South Wales Branch of the British Medical Association on June 21, 1927.

that obesity is found only amongst men and women who follow a sedentary occupation or none at all. I might also add that never or seldom does one find a fat physician, not so amongst the other branches of our profession. I am assuming that when we speak of obesity at this meeting, we are considering "excessive fatness" and that we are not drawing a distinction between the words "excessive overweight" and "obesity," but dealing with the condition be the causation exogenous, endogenous or a mixture of the two.

In general terms, we may say that if a person suffers from exogenous obesity, it is his or her own fault, whereas, if he or she suffers fom the endogenous affliction, it is his or her misfortune.

There is very little difficulty in distinguishing the one variety from the other in typical cases. The people who suffer from obesity of endocrine origin, though numerous, are a very small percentage of the excessively fat people with whom we meet. The difficulty that has so often to be faced, however, is to determine whether the endogenous variety has or has not been engrafted on the exogenous, a condition of affairs which must frequently, if not inevitably, occur sooner or later in a progressive condition.

In all circumstances body weight is indicative of the balance between energy intake and output. A question of supply and demand and over-weight is the excessive storage of energy. There are three ways of treating it: diminishing the intake, increasing the output of external work and increasing the output of internal work.

Thus in treating obesity *per se* we reduce the food intake, preferably by cutting down the fats and carbohydrates, but by doing it gradually. Patients are delighted to find that they have lost three kilograms (half a stone) in the first week, but the pleasure soon wears off. It is unwise to reduce the weight too fast. My experience is that the patient will have a "banquet" occasionally, unless the weight is reduced gradually. Much patience must be exercised in keeping them content to lose two to four pounds a week. Acting upon the belief that the food taken in the earlier part of the day acts as the fuel to produce the energy required for the day's work and is more or less burnt up and that what is taken at night is stored up, I generally begin by cutting down the food taken after 2 p.m. and eventually I allow a generous caloric breakfast, less generous midday meal and meagre meal at night. I prescribe a "dry" diet, as I believe the dry meal tends to more perfect mastication of food and the more perfect the mastication, the less food need be and is taken. On more than one occasion I have treated a patient who has been endeavouring to reduce weight by doing without the morning meal. I have allowed them the same quantity of food, but have insisted that the evening meal be the one forfeited and the meal be taken without liquid, with most gratifying results regarding loss of weight. I may say that their gratitude is tempered by a certain amount of grumbling. We begrudge giving up the pleasure of the evening meal and the comfort it engenders at the only time of day that we can enjoy that comfort.

It is unnecessary to particularize further concerning the intake.

Output of external work must be prescribed in the shape of exercise. In many cases active exercises are out of the question, as the picture of the fatty myocardium must be kept well to the fore. For such patients massage can do no harm and is often a necessity. If it does not reduce the weight, it assists in preparing the patient to undertake active exercise. Of course I am speaking of the patient whom I consider to be over-fat, not of the patient who considers herself (I intend you to note the gender) to be excessively fat. Since the introduction of a garment called the "one piece dress" it is extraordinary what a number of the opposite sex think themselves "gross."

In some environments it is usual for the ladies to have one liquid day a week to preserve their figures. This is a modification of the American three days' starvation treatment, in which the patient is allowed to gourmandize for the remaining four days. The American treatment is not without a risk, that of acidosis. The ladies who practise the liquid day "stunt" seem to get at least great comfort from their little penance and so long as they do not allow the scales to act as arbitrator, are quite happy and have much faith in its efficacy.

Cabinet baths, Turkish baths and other sweating devices are useful adjuncts to treatment if used judicially and if not otherwise contraindicated. Of the many other mechanical devices and electrical treatments flaunted and advertised I have no personal knowledge.

The third method of coping with overweight, that is by increasing the internal work of the body, is the laziest, if the easiest way to get thin, justifiable in many cases, necessary in many.

I cannot see any object to be gained in speaking to a meeting of physicians of the treatment of obesity in any specific concurrent disease. We all recognize the handicap under which the patient is labouring, our only difficulty is at times to differentiate between cause and effect. It is certain that we can never do any harm in treating the obesity and we seldom do any permanent good until the obesity is treated.

Just as we find many thin people taking much more food than their caloric requirements, so we find many fat people retaining their weight upon less food than would seem to be necessary. These latter are no doubt one form or another of obesity due to endocrine dysfunction. I do not wish to touch on this more than to say that I deem myself fortunate to find some outstanding symptoms which will guide me to the dysfunction of a particular endocrine organ. I admit freely that in treating the endogenous varieties *per se* it is more often than not a question of trial and error. In conclusion, I want to say that in all cases the well-being of the patient must be considered as of paramount importance. If the patient feels better over-weight, scientific instinct must not obscure common sense.

OBESITY.[1]

By A. HOLMES À COURT, M.D. (Sydney), M.R.C.P. (London),
Honorary Physician, Sydney Hospital.

OBESITY may be defined as the condition in which there is excessive deposition of fat in the body as a result of over-nutrition, metabolic disturbance or disorder of the glands of internal secretion.

It is usual to recognize two kinds of obesity, exogenous and endogenous, although the distinction between the two is not always clearly cut and a variety of factors may be recognizable in studying the ætiological basis of any individual case.

EXOGENOUS OBESITY.

In the exogenous type racial and hereditary factors are frequently recognizable. It is a common observation that in certain families there is a decided tendency to stoutness. The peculiarity is not infrequently associated with a pleasant and equable type of mentality. Shakespeare referred to this in "Julius Cæsar," Act i, Scene 2:

> Let me have men about me that are fat,
> Sleek-headed men and such as sleep o' nights;
> Yond' Cassius has a lean and hungry look,
> He thinks too much: such men are dangerous.

Habits of life play an important rôle. Most of the subjects of endogenous obesity are good trencher-men. For the most part they eat or have in the past eaten exceedingly well, although the stout person frequently protests that the appetite is meagre. Individual standards of comparison vary so greatly that unless food is weighed or measured in any given case, it is very difficult to judge from the history whether the quantity consumed is in excess.

This kind of obesity is, however, not necessarily associated with excessive intake. It is probable that certain persons are able to assimilate foodstuffs more efficiently than others.

In considering this aspect of the subject a working standard of normal weight and normal dietetic requirement is desirable.

Normal weight (Broca's formula) = (height in centimetres – 100) kilograms.

Normal diet = (weight in kilograms × 37·4) calories.

A patient weighing seventy kilograms (eleven stone) would therefore require 2,600 calories *per diem*.

The nature of a man's occupation would naturally cause a variation in the amount of his food, physical work demanding more energy than a sedentary profession.

ENDOGENOUS OBESITY.

In endogenous obesity in which there is a definite pathological basis certain well-defined groups of cases are recognizable.

[1] Read at a meeting of the Section of Medicine of the New South Wales Branch of the British Medical Association on June 21, 1927.

The Group Associated with Pathological Conditions.

The group associated with pathological conditions is exemplified by emphysema in which deficient oxidation is a factor and diabetes in which there is profound metabolic disturbance.

In the latter condition it would be of interest to inquire of the biochemists whether there is recognizable any characteristic difference in the glucose tolerance curves and basal metabolic rates in fat and in this diabetics or whether the one condition is merely the precursor of the other.

Obesity sometimes occurs as a sequel of acute infective fevers. In some instances after typhoid fever, more rarely diphtheria, patients are observed to become inordinately fat. This may be explained in part by the ravenous appetite during convalescence which follows the long semi-starvation of acute fever or may be due to endocrine disturbance resulting from the acute infection.

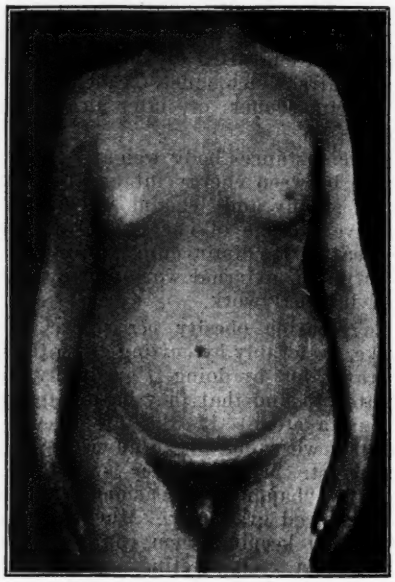


FIGURE I.
Eunuchoid Type of Obesity. (After Jelliffe and White.)

Endocrine Dysfunction.

Gonadal Type.

The gonadal type is associated with disturbance of sex glands, the disturbance of metabolism may be observed at puberty, at the climacteric or after parturition.

Abnormal fatness in girls about puberty is not at all uncommon. In some instances the excessive obesity of young girls particularly the bottle-leg type seems to become definitely more pronounced at this epoch.

An increase in weight following marriage is sometimes observed. It would be difficult to say whether this be due to the more settled and regular conditions of life and conjugal bliss or whether an altered gonadal secretion is a factor.

FIGURE II.
Dystrophia Adiposo-genitalis (Fröhlich Type). (After Purves Stewart.)

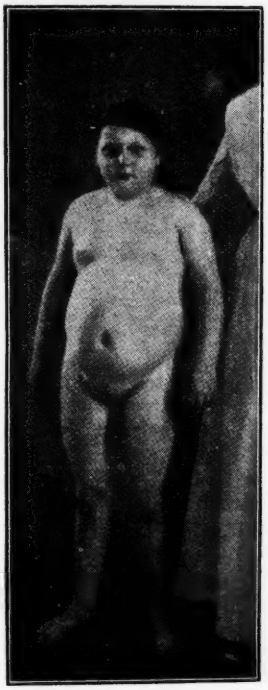


FIGURE III.
Hypopituitary Type of Obesity. (After Jelliffe and White.)

Obesity commencing about the climacteric is well recognized and the "middle-aged spread" so dreaded by the feminine mind is a by-word.

In contrast to the foregoing there is the peculiar sluggish obesity of eunuchism (see Figure I). This is associated in the male with distribution of adipose tissue in definite situations giving an appearance of femininity to the form. The mammary development is excessive and fat hangs loosely about the protuberant abdominal wall. An analogous condition of obesity has been observed in association with ovarian deficiency in young females. There is, moreover, a well-defined type of excessively stout young woman with small mammary development, infantile or small uterus and diminished sexual instinct not infrequently associated with sterility.

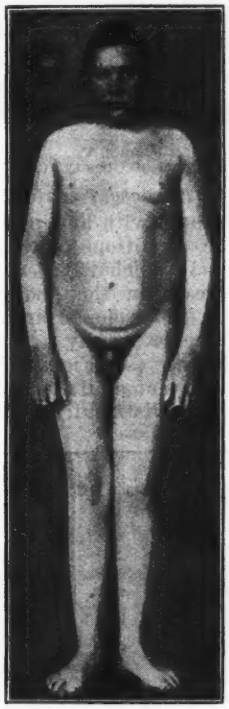


FIGURE IV.
Adult Pituitary Type of Obesity. (After Jelliffe and White.)

Thyreogenic Type.

The clinical features of the myxœdematous type of obesity are so well known that their recognition should be easy. It is, however, a remarkable fact that even in these days when endocrine disorders have received so much attention, that many cases of myxœdema go long unrecognized.

Minor degrees of subthyreoidism are extremely common. Estimations of the basal metabolic rate are of great value in the recognition of such patients and the response to small doses of thyreoid substance is as gratifying to the physician as to the patient.

FIGURE V.
Pluriglandular Type of Obesity. (Author's case.)

Pituitary Type.

Adiposity associated with hypopituitarism is well illustrated in the condition known as *dystrophia adiposo genitalis* (Fröhlich). Patients of this group manifest an increase in the abdominal fat; the sexual organs are ill-developed and retain the infantile type. There is usually a greatly increased carbohydrate tolerance (see Figures II and III).

Pituitary adiposity of adult type is also characteristic, the fat being distributed particularly about the shoulders and anterior abdominal wall, whereas the limbs are usually finely cut and tapering with shapely hands and feet (see Figure IV).

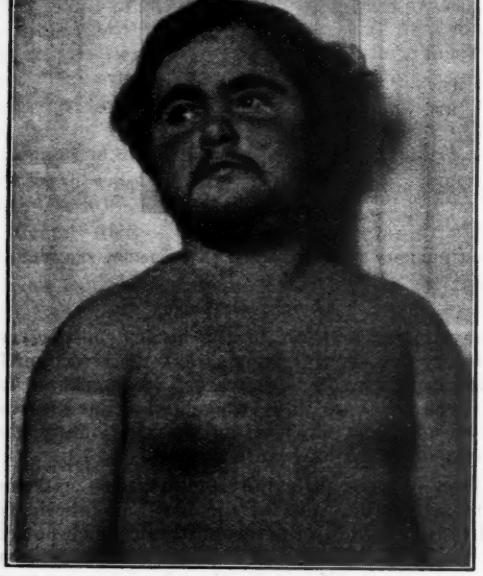


FIGURE VI.
Pluriglandular Type of Obesity. (Author's case.)

Pluriglandular Types.

Patients are frequently observed who manifest definite stigmata of both thyreoid and pituitary dysfunction. A remarkable instance of pluriglandular syndrome is figured in the case of a child, aged seven and a half years, recently under observation for several weeks, the clinical picture suggesting both thyreoid and pituitary defect. The face of this child was like that of a florid barmaid of thirty-five to forty years (see Figure V). There will be noted a heavy growth of hair in the beard area, fully developed pubic and axillary hair as well as coarse dark hair over the whole of the body (see Figure VI). The skin was coarse and greasy with evident sebaceous glands. The limbs and hands were cretinoid in appearance and the distribution of fat about the body suggested pituitary dystrophy, the voice deep and growling like that of an acromegalic (see Figure VII). The extreme hairiness of body with precocious sexual development was reminiscent of the clinical picture described in relation to tumours of the adrenal cortex. Skiagrams

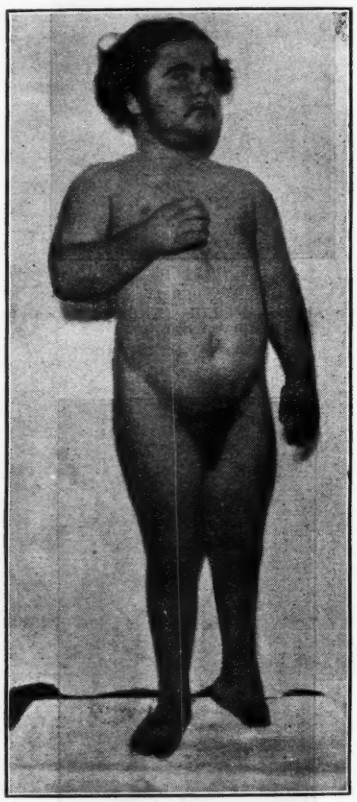


FIGURE VII.
Pluriglandular Type of Obesity. (Author's case.)

revealed an increased bony development of both anterior and posterior clinoid processes roofing over the *sella turcica* which was rather smaller than normal.

A glucose tolerance test was not recorded.

At autopsy a malignant neoplasm was found involving the under surface of the right lobe of the liver with secondary metastasis in the lungs. On section this tumour proved to be carcinomatous and it was suggested that it might have arisen from adrenal cortex, although this could not be definitely established.

Owing to the decomposed state of the body the thyreoid and pituitary glands were not examined microscopically; no adrenal tissue was recognized.

Lipomatosis.

In the interesting group of cases known as the lipomatoses the localized fatty deposition is to be distinguished from the general increase of fat in obesity proper. These cases are, however, apparently so closely related to some of the endocrine types of obesity that their inclusion is necessary in the discussion of fatty overgrowth. There are several clinical types recognized:

1. Nodular circumscribed types—fatty masses chiefly about neck and shoulders.

2. Diffuse adenolipomatosis—large fatty masses more or less symmetrically arranged about trunk and limbs (see Figure VIII).

3. Multiple lipomata—lipomata or fibrolipomata sometimes several hundreds of circumscribed fatty tumours distributed with a certain amount of symmetry about body and limbs.

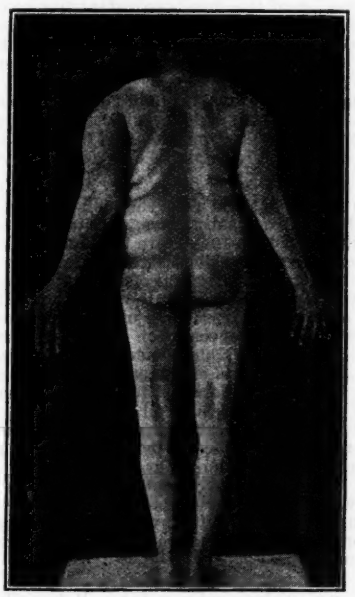


FIGURE VIII.
Diffuse Adenolipomatosis. (After Osler and McCrea.)

FIGURE IX.
Adiposis dolorosa. (After Purves Stewart.)

4. *Adiposis dolorosa* (Dercum) in which the fatty masses are usually symmetrically arranged and may be painful and tender (see Figure IX).

5. Pseudo-hypertrophic dystrophies.

6. *Lipodystrophia progressiva.*

Subgroups 5 and 6 are not connected with obesity proper, but are included because in the former the inordinate deposition of fat in the hypertrophied muscles suggests a similarity to certain of the lipomatoses in which a disturbance of the nervous system plays some part. Certain cases of *lipodystrophia progressiva* are recorded in the literature in which there has been described an actual deposition of excess fat in the lower part of the body *pari passu* with the wasting in the upper parts.

The lipomatoses proper of which diffuse adenolipomatosis and *adiposis dolorosa* are the classical types are of great clinical interest.

In the former the more or less symmetrical fatty aggregations in which lymphoid tissue has also been found, suggest a disturbance of the lymphatic system as well as neurotrophic influence. It has, moreover, been demonstrated that abnormal deposition of fatty tissue may follow localized lymph stasis. In cases of this nature a definite train of symptoms is frequently observed: neurasthenia, undue fatigue with cardiovascular asthenia, low blood pressure and rapid pulse rate. These cases differ from *adiposis dolorosa* in that the response to treatment is often more satisfactory than in Dercum's disease.

In a patient of this type recently observed over a period of seventeen months the weight was reduced from 91·8 kilograms (fourteen stone eight pounds) to 72·45 kilograms (eleven stone seven pounds) following treatment by thyreoid substance.

Dercum's disease (*adiposis dolorosa*) is probably less infrequent than the statistics imply. The pathology is imperfectly understood and treatment correspondingly unsatisfactory.

SOME BIOCHEMICAL ASPECTS OF OBESITY.[1]

By F. S. HANSMAN, M.B., Ch.M. (Sydney), M.R.C.P. (London),
Director of the Biochemical Department, Royal Prince Alfred Hospital, Sydney.

IN order to appreciate the problem of obesity some understanding of the physiology of fat metabolism is necessary and no apology is needed in briefly reviewing what is known of this subject. In the account of the physiology that follows, the admirable monograph on "The Fats" by J. B. Leathes and H. S. Raper has been freely used. I intend to deal only with the physiology of neutral fats; cholesterol, lecithin and other lipoid substances will be mentioned only when absolutely necessary. The only neutral fats that concern us are the triglycerides of stearic, palmitic and oleic acid. Stearic acid is a saturated fatty acid of the formula $C_{17}H_{35}COOH$ and has a melting point of 70·5° to 71·5° C. Palmitic acid is a saturated fatty acid of the formula, $C_{15}H_{31}COOH$ and has a melting point of 63° to 64° C. Oleic acid is an unsaturated fatty acid of the formula $C_{18}H_{34}O_2$ and has a melting point of 13·5° C. or 18° C. as two isomers exist.

By a saturated fat we mean that all the carbon bonds are fully satisfied, but in unsaturated fats we have in the chain one or more pairs of carbon atoms united by a double union. Such a fat is able to combine with iodine or another halogen and become saturated. Oleic acid has two bonds capable of combining with iodine in this way and triolein, as it is found in neutral fats, therefore, has six bonds. When we express the amount of iodine taken up by a fat in becoming saturated as a percentage to the weight of fat, we obtain the "iodine value" of that fat, so that the iodine value of triolein is 86·2.

Adipose tissue is made up of a mixture of the three neutral fats just enumerated. These may exist in varying proportions and the larger the amount of stearic acid present, the higher the melting point, that is the harder the fat. For example, beef tallow which contains 51% stearic acid, is a very solid fat. The larger the amount of oleic acid present the lower the melting point, the more fluid the fat and the higher the iodine value and, as we shall see later, the more reactive the fat. Connective tissue fat has a low iodine value.

I quote from Leathes and Raper's monograph:

In mammals, adipose tissue forms the chief store of reserve fat, but in the lower animals fat may be stored in other regions such as the liver or muscles or special glands. Adipose tissue contains from 88 to 93 per cent. of fat, the amount varying slightly with the species. The fat consists almost entirely of triglycerides, and may be taken to be made up partly of fat that has been synthesised by the animal from substances of a different nature, and partly of fat which has been taken as food in excess of its requirements. It is thus likely to vary in composition with the fat in the food, and there are many observations on record which show that this is so. Lebedeff (1882), for instance, starved two dogs until almost the whole of their reserve fat had been used up, and then fed one on linseed oil and the other on mutton fat. After a time the dogs were killed and the melting point of their adipose tissue fat determined. The dog that had received linseed oil contained adipose tissue fat with a much lower melting point (it was liquid at 0° C.) than that of normal dogs, whereas the dog that had received mutton fat gave a melting point higher than normal, above 50° C. The melting point of the connective tissue fat thus tended to approach that of the fat contained in the food. This same type of experiment has also been used to show that fatty acids not normally found in the body may be stored there if a sufficiently large amount is given in the food. . . .

In the same animal, the composition of the adipose tissue fat varies. It is common knowledge that the fat which lies just under the skin has a lower melting point than that found more internally. These differences in melting point are associated with corresponding differences in iodine value. The lower melting fats have a higher iodine value and therefore contain a greater proportion of unsaturated fats. Henriques and Hansen (1901) have investigated this phenomenon and have shown that there is a regular gradation in iodine value in a downward direction as the melting point of the adipose tissue fat increases. Even in the subcutaneous fat of the pig these gradations can be observed as one passes inwards from the outermost layer. The following figures given by Henriques and Hansen for a pig fed on barley illustrate this:

Source of Fat.		Iodine Value.	Solidifying Point.
Subcutaneous fatty tissue — Outer half — Outer layer		60·0	—
Subcutaneous fatty tissue — Outer half — Inner layer		57·1	26·4° C.
Subcutaneous fatty tissue — Inner half — Outer layer		51·8	28·0° C.
Subcutaneous fatty tissue — Inner half — Inner layer		50·6	27·7° C.
Perirenal fat		47·7	29·6° C.
Omental fat		46·5	29·4° C.

Jaeckle (1902) has examined the subcutaneous fat from new-born infants and compared it with that of adults. From an infant three days old the iodine value was 47·0; from others two to three weeks' old, 58·1; and from adults, 62 to 73. The fat of the new-born infant has also a higher melting point than that of adults, and this is no doubt to be correlated with the internal situation of the fœtus. Henriques and Hansen attribute these differences in composition to differences in temperature of the regions where the fat is laid down. They determined the temperature of the subcutaneous tissue in a pig at different depths from the surface and found that 1 cm. deep it was 33·7, 2 cm. 34·8, 3 cm. 37·0, and 4 cm. 39·0. . . . .

Now it is generally held that the cells of adipose tissue do not synthesise from substances, such as protein or carbohydrate, the fat which they store up, but rather that they take up this fat from the blood stream. In what form it is taken up, whether as neutral fat, fatty acid or soap is uncertain, but the process seems to be one which favours the storage at lower temperatures of the more unsaturated fats. It would be mere speculation to suggest any physical or chemical cause for this phenomenon, but it appears to be an example of the process of adaptation which might well have such a basis. It is possible, for instance, that the permeability of the adipose tissue cell to neutral fat, fatty acid or soap varies with temperature, and that at lower temperatures it is more permeable to the unsaturated fats, fatty acids or soaps than to the saturated ones. An adequate explanation based on experimental evidence is, however, still wanting, but it does not appear unlikely that it will be found in an unequal variation with temperature of some property common to the saturated and unsaturated fats, fatty acids or soaps.

We have no inkling why a fat cell has the ability to store fat, but surely it is just as wonderful as the function of any other cell of the body.

[1] Read at a meeting of the Section of Medicine of the New South Wales Branch of the British Medical Association on June 21, 1927.

The Synthesis of Fat in Animals.

Now let us consider the synthesis of fat in animals. Some of the fat, of course, comes from that ingested as food, but it is well known that mammals can become fat, though the fat in the food is small in amount. The formation of fat from protein has not yet been satisfactorily demonstrated. Lawes and Gilbert were the first to prove scientifically that carbohydrates can be synthesized to fat; an example of their proof is shown by the following experiment. I quote again from Leathes and Raper's monograph:

> Two pigs were taken from the same litter. One was killed and the fat and protein it contained were estimated. From the figures, the fat and protein content of the other was calculated. This pig was fed on a food mixture of known amount and composition, and after several weeks was killed and analysed. From the results, the amounts of fat and protein put on during the experimental period were obtained. It was found that the increase in fat was greater than could possibly be accounted for by the fat and protein in the food consumed, assuming that the whole of the carbon in the protein not stored or excreted as urea had been converted into fat. The excess of fat must, therefore, have been formed from the other main constituent of the food, namely, the carbohydrate. The following are among the more important figures which Lawes and Gilbert give:

Total fat increase	71·2 lbs.
Fat in food	12·4 lbs.
Fat synthesised	58·8 lbs.
Protein in food	64·0 lbs.
Protein put on	5·5 lbs.
Protein available for fat synthesis..	57·5 lbs.
Carbon in fat synthesised	45·3 lbs.
Carbon in available protein, less carbon excreted as urea	27·4 lbs.
Carbon in fat which must have come from carbohydrate	17·9 lbs.

The method by which the conversion of carbohydrates into fat is brought about is not yet definitely known, but the most widely accepted theory is that of Mrs. Smedley McLean,[2] who considers that the carbohydrate is broken down to acetaldehyde and pyruvic acid and then by a series of condensations during which water and carbon dioxide are alternately given off, the fatty acids are gradually built up. There is a great deal of evidence that this process goes on in the liver. The production of a large amount of carbon dioxide during this synthesis is evidenced in the high respiratory quotients which may rise to 1·39 in a hibernating animal when fat is rapidly being formed from carbohydrate. We shall have occasion to refer to this point later when dealing with the pathology of the obese. Fats synthesized from carbohydrate will be saturated fats, therefore they will be of high melting point and this is another fact which will be later considered.

The Fate of Ingested Fat.

Next we must trace the fate of ingested fat. In the stomach a lipase exists which is rapidly destroyed by acid, so that it would be of importance only in cases of achlorhydria, where the normal stimulus to pancreatic secretion being absent, a provision is made for fat digestion. However, no work as far as I could find, has been done to see if such a lipase exists in cases where the production of hydrochloric acid is in abeyance.

In the small intestine two fat-splitting enzymes are available, one from the pancreas, the other from the intestinal secretion and their function is to break up the neutral fats into fatty acids and glycerol, as neutral fats cannot be absorbed as such through the walls of the intestine. The glycerol is easily absorbed and the fatty acids are absorbed dissolved in bile or as soaps of sodium calcium or magnesium. The presence of cholesterol which is a normal constituent of bile, greatly enhances the solvent power of bile for fatty acids and soaps. Once absorbed, the fatty acids are again converted into neutral fats and pass *viâ* the lacteals to the thoracic duct. A small amount may go direct *viâ* the portal vein to the liver. The resynthesized fat need not always have the same composition as the fat present in the small intestine, as an attempt is made to have a fat of uniform composition in the thoracic duct, but if a certain fat is given in excess, then such a fat, even though foreign to the adipose tissue of the animal, will be absorbed and appear in the tissues of the animal. The contents of the thoracic duct pour into the venous circulation at the root of the neck and a rise in the amount of neutral fat can in most cases be demonstrated and some increase in cholesterol and lecithin is also present, but the taking up of fat by the tissues is so efficient, that, though the transportation of fat is proceeding rapidly, no definite increase in the blood need be present. The mechanism of fat transportation and the relative parts played by the plasma, the blood cells and by the various lipoidal substances are very complex and need not be further dealt with here.

Discharge of Reserve Fat into the Blood.

The discharge of reserve fat into the blood is a subject of great importance, as fat is the only foodstuff that is stored in the body in any great amount and in starvation must provide the fuel for the continuation of cell metabolism. "The way in which this reserve fat is put into circulation and conveyed to the organs where its energy is to be liberated is very little understood, but some idea of the amount required can be gauged from the fact that two hundred grammes *per diem* are needed during starvation." Studies of the fat content of the blood have yielded very little precise knowledge as to the mechanism of fat mobilization and combustion, any more than a count of the number of coal trucks at any one point at a given instant would indicate how much coal was being burnt at the City Power Station or what reserve there was at the coal fields. But in certain conditions, such as phosphorus or phlorrhizin poisoning, the amount of fat in the blood increases, but whether this is due to a too rapid discharge from the reserves or too slow an assimilation by the liver and other organs, has not been decided.

The liver is a very important organ as regards fat metabolism and large amounts of fat are dealt with in it, its chief function apparently being to desaturate the neutral fats, so that oxidation can take place to end-products, giving rise to energy or the desaturated fat can be made available for repair of tissue cells or the simple neutral fats may be built up here into complex lipins containing phosphorus and nitrogen.

The Oxidation of Fat.

The bulk of fat is used for the production of energy and this is obtained by the combustion of the molecule to H_2O and CO_2; from one gramme molecule of fat, for example stearic, we obtain:

$$(C_{17}H_{35}COOH)_3C_3H_5 + 80\,O_2 = 57\,CO_2 + 52\,H_2O$$

from this we see that 57 gramme molecules of CO_2 are produced and 80 gramme molecules of O_2 are consumed.

The ratio $\frac{CO_2}{O_2}$ gives the respiratory quotient which in this case is 0·71, so that when fat is solely being used in the body to produce energy, this is the respiratory quotient we would obtain. At the same time there have been 52 gramme molecules of water produced and by calculation we could show that 100 grammes of fat would produce 107 grammes of H_2O when completely oxidized. This is an important consideration when dealing with water balance experiments and was completely overlooked by Oskar Schirmer.[3] He remarks in dealing with a case of oliguria that:

> From the first to the thirty-first October, we obtained an output of 9,550 c.cs. of urine against an intake of 28,450 c.cs. of water. If one considers that the water content in the solid foods is not taken into consideration, that the patient did not sweat and that no abnormal loss of water took place in the fæces, then one obtains an excess of 18·9 kg. of water. A marked change in the weight had not taken place during the observation period. Since the oliguria dated from the first of October, 1919, we can consider that in this case at least 20 kg. of water had appeared without apparent dropsy, without change of the body weight and with a salt-poor diet (3·5 g. per diem). As the muscles remained very hard right up to the end, the fatty tissue must have become "fat poorer" and water richer. It is worthy of mention that the pressure sensibility of the skin in the higher and lower extremities increased, also in the buttocks, especially in the fat rich places, during the time of the observation period.

The criticism that I would level is that the fat itself when metabolized would produce more water than the water which was supposed to replace it. Neither the water from the fat nor fluid intake left the patient and yet the patient did not increase in weight.

Fat is burnt to its end-products, chiefly in the muscles, but the intermediate changes by which the complex molecule is broken down, are not known, but most evidence points to the production of a carbohydrate substance as one intermediate body. Fat enters into the essential make-up of every cell in the body.

> Hoppe Seyler, in 1866, first pointed out the fact that cholesterol and lecithine are both of them to be found wherever the phenomena of life are to be observed, and taught that they stood in a very close relation to the life of protoplasm. . . . Protoplasm is a complex equilibrated system in which, side by side with colloidal solutions of proteins, fatty components together with cholesterol, though quantitatively less in amount, play a rôle which it is impossible to say is less essential than that of protein.

This fat of the cell protoplasm is called by Mayer Schaeffer and Temoine *élément constant* and is present in the dried tissue up to 12%. It does not stain by ordinary methods, but has to be extracted by fat solvents. It cannot be detected normally by microscopical examination. In conditions of fatty degeneration this is the fat which becomes apparent to the microscopist. It has lost its intimate association with the protein of the cells. The relation of this *élément constant* to the cell membrane and to the metabolic changes going on within the cell and to the plasma without cannot be considered here.

Pathological Obesity.

We must now try to see how these physiological considerations can be applied to the subject of obesity and I must ask your indulgence for the many shortcomings.

What are the factors that lead to the excessive deposition of adipose tissue? That excessive food intake above what is necessary for energy requirements is often a potent cause, is well illustrated in the habits of certain races notably the Baganda tribe who inhabit the British Protectorate of Uganda. The women of the upper classes of this race are prized in proportion to their rotundity. From early life complete idleness is enforced, forced feeding is compulsory, consisting of the intake of large amounts of milk from special cows. When adult age is reached, these "fine ladies" are completely helpless masses of fat. They are carried to various functions by slaves and as such they form ideal exhibits of exogenous obesity. A recent law has forbidden the continuance of this custom. The cows have been sold, the slaves freed and the women having to use their ambulatory muscles, as well as those of the alimentary tract, have become thinner and the laws of a more normal physiology obtain.

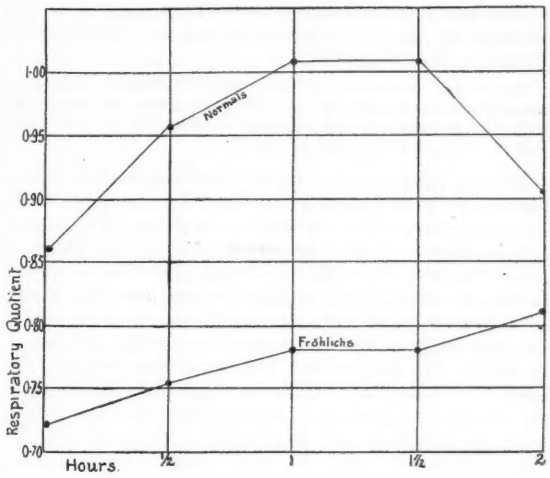
Another interesting feature of fat metabolism, provided by the habits of the races of mankind, is the soft oily adiposity of the Mediterranean and Central European nations, where the consumption of unsaturated fats of low melting point in the form of oils provides a large portion of the food intake. In contrast to this is the firmer fat of those people whose fat is derived from mutton and beef.

In the problem before us we are more concerned with the accumulation of fat in excess of normal when the intake of food is apparently by no means commensurate. This state of affairs may be caused either by an excessive conversion of foodstuff to fat or by an inability to oxidize fat for the purpose of supplying energy. The blame for these abnormalities in fat metabolism has been laid on certain endocrine glands and the chief defaulters are the pituitary, thyreoid and pancreas.

That disorders of the pituitary (probably the anterior lobe)[4][5][6] can result in obesity has been abundantly proved and the condition results, if occurring before puberty, in the syndrome known as Fröhlich's disease.[7] The redistribution of the adipose tissue in pure cases of this disease is very characteristic and I feel that it can be best explained by considering the type of fat produced in such patients. No analysis of the composition of the fat has been made as far as I can gather, but that it is firm in nature and of high melting point there can be no doubt, as can easily be proved from physical examinations alone. Now it is well known that such patients are very fond of carbohydrate, especially in the form of sugar and if, as seems certain, the anomaly of metabolism which exists in these patients, is that the path of the conversion of carbohydrate to fat is easier than the path of carbohydrate to water and carbon dioxide, we shall have in these patients the continuous production of large amounts of solid fat of high melting point. This fat, following the law of temperature and melting point stated previously will, I think, tend to accumulate where the temperature is highest, thus it will first fill up the omentum and perirenal spaces *et cetera* and then in those places successively that have the highest temperature, for example on the abdomen and around the mammæ which have a rich blood supply. In the mammary fold which is a well-protected spot and always feels warm, as all know who have had to palpate the apex beat of the heart in obese people, so firm and solid a fat is laid down that this area is always very tense. Next the axillæ. Here the fat is found over the veins and arteries, the hot water pipes of the body. In the arm over the bellies of the muscles, the very furnaces themselves, we find the fat cuddled, trying to keep fluid and as we go distally, we find the fat over the bellies of the muscles of the forearm, of the thenar and hypothenar eminences and over the bellies of the phalangeal muscles.

Similarly in the leg muscles and over the masticatory muscles of the face. In the back the spinal muscles give the necessary heat for a large accumulation of fat. But here the temperature is apt to vary. Fat patients complain of pains and aches in the back especially when they sit about, the reason being that when reclining or sitting the spinal muscles will be at rest, the furnaces will close down and we have a large unprotected mass of fat cooling down, solidifying, compressing nerve endings and causing the pains and aches. When the distribution of fat is not so typical, there is probably a larger intake in the food of fats of low melting point, so that the distribution of fat is over a wider range of temperature and not so confined to places of local heat production.

That such patients do not deal with glucose in a normal fashion is shown by a sugar tolerance curve. After the ingestion of fifty grammes of glucose the blood sugar does not rise typically above 0·15 gramme % and in many cases does not reach even this level. When we turn to the effect of glucose on the respiratory quotient, we get results as shown in the accompanying diagram.



These results are the averages of six normal persons and of five patients suffering from Fröhlich's syndrome respectively.[8] In the normal person the respiratory quotient which is the ratio of the amount of carbon dioxide produced to the amount of oxygen oxidized in the body, rapidly rises to unity; this indicates that the glucose is being converted to water and carbon dioxide, but you will notice that by the end of one and a half hours it has already begun to fall. In the Fröhlich patients the respiratory quotient is not appreciably altered until about two hours after the ingestion of sugar. Now the authors from whose paper this chart was taken, maintain that the results in the Fröhlich patients is a proof of the conversion of the ingested glucose to fat, but this cannot possibly be or the respiratory quotient would have risen above unity, because when glucose is converted to fat, a large amount of carbon dioxide is given off, as pointed out previously. But the important thing to note is that the respiratory quotient is still rising at the end of two hours and it is extremely likely that had the experiment been continued longer, to three or four hours, the respiratory quotient would have risen above unity, as was the case in the hibernating animals and in certain experiments on dogs performed by Lusk[9] who gave glucose to these animals and found respiratory quotients above one between the second and fourth hours. I would interpret the respiratory quotient in these cases of Fröhlich's syndrome as indicating the preparation of the glucose molecule for its later conversion into fat. No carbon dioxide would be lost until, as Mrs. Smedley McLean points out, the condensations of acetaldehyde and pyruvic acids begin. I mean to test this point out as soon as opportunity arises.

Whatever the anomaly present may be, there is no doubt that patients suffering from pituitary obesity tend later to another type of carbohydrate dysfunction, namely diabetes. Practically all those patients with obesity of long standing begin to show high and prolonged blood sugar curves.

The basal metabolism in pituitary obesity is not affected by the pituitary gland *per se*. Boothby[10] states in this connexion:

> There is, however, as yet little evidence that the secretion of any part of the pituitary gland is concerned with the normal rate of cellular combustion in the sense that it acts as a calorigenic agent.

But we find that the basal metabolic rate is often higher or lower than normal and the variation from normal is due to a variety of factors. The metabolism may be raised as much as 20%, but there is some evidence that this apparent elevation of metabolism to some extent results from an error inherent in the method of calculation of the body surface. The Du Bois tables are worked out from a formula in which the height and weight of the patient are used.[11] Now the surface of a given mass depends on its specific gravity. The specific gravity of the body as a whole is about 1040. That of adipose tissue is about 1086. In very obese people a very large proportion of the weight is made up of fat which, being lighter than the average of the body, occupies a greater surface than would the same weight of mixed body tissue, therefore the calculated Du Bois surface area is too small. When we divide the total calories produced by such a person by the calculated surface area to obtain the calories produced per square metre of body surface, we would thus get a figure greater than it should be and the calculated basal metabolic rate is too high. However, as the surface area is used only as an index of the active protoplasmic mass of the patient and in fat people this mass would be comparatively less than in small people, so that the various factors to be considered tend to cancel out.

In fat people with a moderately low metabolism the interpretation of the result is also complicated. The metabolism of fat and that of water are closely associated. André Mayer has shown that the amount of water held by tissues varies inversely with the amount of fatty acid and directly with the amount of cholesterol present. It is well known that certain tissues, such as the ankles, of some fat people are liable to hold considerable amounts of water from time to time, though no definite œdema may be present. This water would be an inert mass increasing the weight and apparent surface area and the calculated metabolic rate would be too low. However, unless the person was obviously œdematous, sufficient water would not be present to lower the rate more than 10% at most.

In general, in obese people when the metabolic rate is below – 15% we can safely assume that the activity of thyreoid gland is diminished and when the metabolism is greater than + 15% we can probably assume that a stimulation similar to that occurring in acromegaly has taken place.

Obesity in pure hypothyreoidism is probably exogenous in nature and occasioned by a normal or increased intake of food associated with the lowered metabolism. The distribution of the fat will depend on the nature of the food. In a frankly myxœdematous patient a lot of the bulk is retained fluid. A person may have a high grade hypothyreoidism and be quite thin. Such a person may gain weight while taking thyreoid extract, as Dr. Blackburn has pointed out.

Insulin undoubtedly plays a large part in fat metabolism and diabetics may get quite fat on a remarkably low diet when receiving "Insulin." Arguing from this, we may postulate a clinical condition of hyperinsulinism and it is possible that certain obese people who complain of sinking feelings and feelings of faintness when they abstain from food for even a short time, may be suffering from a hypoglycæmia due to such a condition. Disease entities due to hyperfunction of all the other endocrine glands are known and it would be indeed strange if the pancreas in this respect were a sole exception.

References.

(1) J. B. Leathes and H. S. Raper: "The Fats," Monographs on Biochemistry Series.

(2) A. I. Ringer and Emil J. Baumann: "The Carbohydrates and their Meabolism," *Endocrinology and Metabolism*, 1922, Volume III, page 269.

(3) Oskar Schirmer: "*Über die Zusammensetzung des Fettgewebes unter verschiedenen physiologischen und pathologischen Bedingungen*," *Archiv für Experimentelle Pathologie und Pharmakologie, Band* LXXXIX, 1921, XIII, page 270.

(4) Harvey Cushing: "The Pituitary Body and its Disorders," 1912.

(5) Norman M. Dott: "An Investigation into the Function of the Pituitary and Thyreoid Glands; Part I: Technique of their Experimental Surgery and Summary of Results," *The Quarterly Journal of Experimental Physiology*, 1922, Volume XIII, page 241.

(6) Harvey G. Beck: "Dystrophia Adiposo-genitalis," *Endocrinology and Metabolism*, 1922, Volume I, page 859.

(7) A. Fröhlich: "*Ein Fall von Tumor der Hypophysis Cerebri ohne Akromegalie*," *Wiener Klinische Runschau*, 1901, pages 883-906.

(8) H. Gardiner-Hill, I. Jones and J. Forest Smith: "Pituitary Obesity in Adolescence," *The Quarterly Journal of Medicine*, Volume XVIII, April, 1925, page 309.

(9) Graham Lusk: "The Science of Nutrition," Third Edition, 1921, page 307.

(10) W. M. Boothby: "The Basal Metabolic Rate in Hyperthyreoidism," *The Journal of the American Medical Association*, 1921, Volume LXXI, page 252.

(11) Eugene Du Bois: "Basal Metabolism in Health and Disease," 1924, page 141.

CONTROL OF THE FEMORAL ARTERY BY CRILE'S CLAMP IN THIGH AMPUTATIONS.

By C. E. CORLETTE, M.D., Ch.M.,

Surgeon to the Sydney Hospital, Lecturer in Clinical Surgery, University of Sydney.

THERE have been several methods devised for the control of hæmorrhage in high amputations through the thigh. An ordinary tourniquet may be used for many amputations, but the problem is not an easy one in high amputations, especially in disarticulations. I have not used the method here described in a disarticulation, but it is obvious that it is applicable to any thigh amputation, high or low.

The method consists in the preliminary application of a Crile's clamp to the common femoral artery through a small incision over its site. After the limb has been removed, the clamp is gradually loosened, and tightened again if required, while

hæmostasis in the wound is attended to in the usual way. When all the vessels have been properly secured, the clamp is removed and the little incision is sutured up. It is a great comfort to the operator to know that he has the chief vessel completely and securely under control from the start.

I give here an account of one of my cases as an example.

A.H., aged thirty-three, had a myeloid sarcoma which had destroyed the lateral condyle and about two-thirds of the thickness of the adjacent lower portion of the femur. The history had begun eight months earlier with a fracture of the femur at the site of the growth. The existence of the growth had not been suspected before the fracture, and it was discovered by the radiographic examination. His medical attendant had advised amputation, but he had delayed operation, and the patient had been treated by deep X ray therapy, which had failed to check the growth in any way. Finally, he consented to amputation.

There is much to be said for spinal anæsthesia in thigh amputations, but in this case general anæsthesia by ether was employed. The first step was to incise over the common femoral and apply a Crile's clamp, and since the nerve path had not been blocked in the spinal canal, the opportunity was taken of blocking the femoral nerve by injection of two mils of 2% "Novocaine" solution into the nerve through the same wound. This, of course, was easily done. The amputation was then proceeded with through an oval incision, the femur being sawn through a little above its middle. As the incision was carried through the soft parts, the vessels and nerves could easily be seen before they were cut. When the sciatic nerve was exposed, it was separated up for some distance and two mils of 2% "Novocaine" solution were injected into it. After the injection of the nerve, an interval was occupied in tying off vessels, and then the nerve was cut distal to the injection. The anæsthetist reported that the pulse gave no indication of alteration in any way when the nerve was cut. The control of the vessels was admirable, and there was practically no blood lost. After all visible vessels had been secured, the clamp was gradually loosened, and a few points of hæmorrhage were clamped and tied. There was no sign of shock of any kind at any time. There was no oozing of blood through the tube, one of large calibre,—merely a moderate quantity of blood-stained serum for a few hours. The tube was removed next day, and the whole wound healed promptly by first intention.

I have never seen a thigh amputation so easily and simply managed with any other method of hæmostasis. From every point of view the operation and recovery were ideally satisfactory.

I have performed two other amputations through the thigh by the same method, and these were in every way as complete a success as in the case of A.H.

I have been greatly impressed by the surgical convenience of this method of controlling the principal artery in thigh amputations.

High amputations of the thigh, and above all, disarticulations, present a large shock factor. In adults, as every surgeon with large experience knows, the problem of shock is very serious indeed, so serious that survival after disarticulation is rare except in comparatively young and vigorous people. Every possible means should be taken, therefore, to lessen shock in these very grave operations. Crile and Lower's anoci-association technique is supported by good results in practice, taking operations in general, and the method I have suggested provides good facilities for nerve-blocking, as has been shown in the case just described. It is, therefore, not only convenient for controlling hæmorrhage, but also for controlling nerve shock.

It may be well to say here that if spinal anæsthesia is used, and the injection is made in the customary place, between the third and fourth lumbar vertebræ—it should never be higher—it will be necessary to infiltrate the area covering Scarpa's triangle with a local anæsthetic before making the incision over the femoral vessel. This is because the sensory nerve supply of the skin of this area is derived, through the ilio-inguinal and genito-femoral nerves, from the twelfth dorsal and first two lumbar nerve-roots, above the level of the lumbar injection.

I commend this method of controlling hæmorrhage to the careful consideration of all surgeons who may have to deal with similar cases.

Reports of Cases.

PHYSOMETRA ASSOCIATED WITH BACILLUS WELCHII SEPTICÆMIA.

By J. G. SLEEMAN, M.B., B.S. (Melb.),
Medical Superintendent, Adelaide Hospital.

The following case appears to be worth reporting on account of its rarity, extremely rapid course and its medico-legal interest.

Clinical History.

E.E., aged twenty-one years, single, was admitted at 12 midday on July 20, 1927, in an extremely toxic state. Her history was difficult to elicit and meagre in its details. She complained of having been losing blood from the vagina for the previous twenty-four hours. She was four to five months pregnant. She admitted having taken pills to bring on an abortion, but denied any criminal interference.

On examination her temperature was 35·7° C. (96·2° F.), her pulse rate was 140 and her respirations numbered 34 in the minute. She was a well nourished girl, in some respiratory distress, extremely jaundiced, the sclerotics being a bright yellow and the skin a *café au lait* colour. The tip of the nose was bluish, the discoloration not fading on pressure, the lips were dry and cracked and the tongue furred but moist. The lungs and heart manifested no abnormalities. On examination the breasts were found to contain some clear secretion. The abdomen was full, but no rigidity was present nor could tenderness be elicited. There was a mid-line tumour arising out of the pelvis, the upper margin reaching as high as the umbilicus; no dulness could be detected in the flanks. Bloodstained discharge issued from the vagina, it was foul smelling; the *os* was open and placenta and a thin umbilical cord were visible. The abdominal tumour was continuous with the uterus. On passing a pair of ovum forceps into the uterus and separating the blades, foul smelling gas could be seen to escape. Smears and cultures were made from skin, vagina, cervix and uterus. Blood was taken for culture and examination.

Forty cubic centimetres of anti-gas gangrene serum were injected intravenously at 2.30 p.m. and the patient was packed with hot bottles. Pituitrin was given by intramuscular injection. The breathing became more hurried and distressed, the respirations numbering forty per minute, the patient became comatose and died at 5.15 p.m. the same day. Blood examination revealed an enormous diminution in the number of red cells, the count being 680,000 per cubic millimetre. In addition the film demonstrated the extraordinary "knocked about" appearance of the cells, many of them being reduced to mere ghosts of

themselves, shapeless specks of tissue, others being somewhat larger, but all of them extremely pale; the hæmoglobin percentage could not be estimated.

The films made from the skin and genital passage and stained by Gram's method revealed a wealth of organisms from each region, skin, vagina, cervix, uterus. In all the films large Gram-positive bacilli resembling morphologically *Bacillus welchii* were seen. Cooked meat medium culture made from smears from these regions all manifested gas and reddening of the meat in six hours; further inoculation into milk and incubation produced the typical "stormy clot."

Blood culture was carried out, the same media being used, gas and reddening of the meat were evident in six hours. Inoculation of milk and incubation revealed the "stormy clot" characteristic of *Bacillus welchii*. No urine was obtained during the patient's stay in the ward nor could any be obtained *post mortem*.

Liver puncture was performed five minutes after death. *Bacillus welchii* were by cultural methods shown to be present in the fluid so obtained.

Post Mortem Findings.

The death of this patient was reported to the coroner. Unfortunately twenty-four hours elapsed before authority was obtained for *post mortem* examination. The findings were as follows.

The body was definitely jaundiced and showed much *post mortem* mottling round the neck and across the upper part of the chest. The heart muscle was flabby, but normal in amount; no necrosis of the muscle was found. The cavities contained gas and small bubbles could be seen under the visceral pericardium. The lungs were rather collapsed, but beyond some congestion along their posterior borders no lesion was evident. Bloodstained fluid was present in small quantity in the pericardial, pleural and peritoneal cavities. The liver weighed 1814·5 grammes (sixty-four ounces), was dark brown in colour, firm in texture, but showed no necrosis or gas formation although gas oozed out of the inferior *vena cava*. The spleen was deeply congested and firm. The kidneys shared in the congestion, but presented no other pathological features other than gas in the veins of the pelvis. The bladder was empty; its walls and mucous membrane were normal in colour. The uterus was enlarged, reaching almost to the umbilicus and was of a dark plum colour, the thickness of the wall varied, but in no place did a perforation exist. The whole wall was honeycombed with cavities of different sizes filled with gas. The uterine cavity itself contained gas which burned with a blue flame. The uterine muscle was "soggy." A small amount of decomposing *débris* could be easily separated from the interior of the uterus. The cervix was deeply congested, but nowhere could any laceration or evidence of gross trauma be seen. Bloodstained fluid could be seen in the cellular tissue of both broad ligaments, this œdema reaching out to the side wall of the pelvis. No lesion was found in the brain.

Comment.

This last case adds nothing except the very uncommon physometra to the clinical picture of *Bacillus welchii* septicæmia. Fortunately proof of the presence of the bacillus in the blood, on the skin, in the vagina, cervix and uterus was obtained during life, thus linking up the local with the general condition.

The failure of serum treatment is only natural. It is impossible to conceive that a patient suffering from severe sepsis and possessing little more than half a million red cells could possibly recover under any treatment.

Three similar cases were reported by Inglis in THE MEDICAL JOURNAL OF AUSTRALIA, January 6, 1923, one by Beare and Cleland in THE MEDICAL JOURNAL OF AUSTRALIA, May 14, 1927, and a further case by Magarey, Cleland and Sleeman in the same journal on May 28, 1927. This case presents no clinical features different from those previously reported, except for the presence of gas in the uterine cavity before and after death, the gas being due to the growth of *Bacillus welchii* in the uterine wall. Investigations carried out in this hospital have shown that a certain number of patients suffering from incomplete abortion harbour *Bacillus welchii* in the genital passages or the uterus without there necessarily being present any symptom due to the activity of this organism or for that matter of any associated organisms, for example colon bacilli or fæcal streptococci. The factor responsible for invasion of tissue by *Bacillus welchii* is probably necrosis of tissue produced either by instrumental trauma or by the action of *Bacillus welchii* toxin in an undrained cavity.

In this case instrumental interference was suspected and it was hoped that the evidence at the coroner's inquest might throw some light on this point, but beyond proving that the girl was quite well until the night of July 18, 1927, the evidence was useless.

This case makes the eighth that has come under our notice. In all of them death has been extremely rapid and criminal interference strongly suspected. Treatment is practically hopeless, as the patients are generally moribund when first seen. Specific treatment by means of anti-gas gangrene serum is the rational procedure and was carried out in this case, but, as previously mentioned, it is difficult to see how a patient with an acute hæmolytic anæmia which leaves available just over half a million red cells per cubic millimetre could recover by any treatment.

LYMPHATIC ŒDEMA OF THE FOREARM: LYMPHANGIOPLASTY.[1]

By H. SKIPTON STACY, M.D., Ch.M. (Sydney),
Honorary Surgeon, Sydney Hospital, Sydney.

F.W., a male, aged fifty years, was admitted to hospital on April 4, 1927, complaining of swelling of the right forearm and hand and of inability to use the hand and of occasional attacks of pain, commencing in the hand and shooting up to the elbow. Seventeen months before this he met with an accident and had cut the dorsum of his right hand and the wound became septic. The hand became swollen and the swelling later extended as far as the elbow. Incisions were then made over the dorsum of the hand and at the elbow and the wounds soon healed, but the swelling remained. For twelve months he had treatment consisting of massage, Bier's treatment, hot air applications *et cetera*, but without relief.

Examination on his admission revealed a middle-aged man, with a temperature of 36·8° C. (98·2° F.). He flinched when the arm was moved. The hand and forearm were swollen as far as the elbow, but the swelling did not appear to be at its maximum, the skin could be slightly wrinkled over the deeper tissues. There was some restriction of all movements of the fingers and wrist. No abnormality was found on examination of his other systems. He denied venereal infection.

On April 12, 1927, operation was undertaken. Six pairs of incisions each about 1·25 centimetres (half an inch) long were made through the skin into the subcutaneous tissues, one above the level of the swelling and the other 7·5 centimetres (three inches) below it. Silk threads impregnated with bismuth, iodoform and paraffin paste were threaded on to a long probe and drawn through from the lower to its corresponding higher incision. The ends of the silk threads were cut off close to the surface and the wounds were sutured with interrupted stitches of iodized silk. The right forearm was kept elevated and the swelling disappeared to a large extent. Two days after operation passive movement was commenced. On April 19, 1927, movement was increased and the patient was told to squeeze a rubber ball for several hours a day. The wounds healed by first intention.

On April 22 movement was still further increased. The patient could flex his fingers to touch the palm of his hand. Very little œdema remained over the dorsum of the hand. On April 28 he was discharged.

[1] The patient described herein was shown at a meeting of the New South Wales Branch of the British Medical Association on July 14, 1927.

About three weeks later the patient reported with some recurrence of œdema over the dorsum of the hand, but with none above the level of the previous operation. He was readmitted on May 23, 1927. On examination it was found that the right hand and forearm were swollen to about ten centimetres (four inches) below the elbow. Operation was undertaken on the following day. Three small incisions, extending down to the subcutaneous tissues, were made over the dorsum of the hand, three half way up the forearm and three just below the elbow. As at the previous operation stout silk threaded with bismuth, iodoform and paraffin paste was threaded on a long probe and pushed through the subcutaneous tissues from the incision on the dorsum of the hand to the corresponding one in the middle of the forearm; the probe was then rethreaded and forced through to the corresponding incision below the elbow. The ends were cut short and the wounds were sutured with interrupted stitches of iodized silk. The wounds healed by first intention and the passive movement was commenced on June 4, 1927. Five days later the movement was increased and all œdema as far as the lower half of the dorsum of the hand had disappeared. Objects such as the handle of a broom could be grasped firmly. On June 10, 1927, the patient was discharged from hospital.

THE "SANOCRYSIN" TREATMENT OF PULMONARY TUBERCULOSIS.[1]

By W. COTTER HARVEY, M.B., Ch.M. (Sydney), T.D.D. (Wales),

Honorary Assistant Physician, Royal Prince Alfred Hospital; Honorary Relieving Medical Officer, Royal North Shore Hospital, Sydney.

"SANOCRYSIN," a complex gold salt, sodium aurothiosulphate, was introduced by Professor Moellgaard, of Copenhagen. It has been shown in experiments on calves to have a definitely specific action on the tubercle bacillus *in vivo* and on tuberculous processes generally.

As the drug acts through the blood stream, the patient most suitable for treatment by "Sanocrysin" are those suffering from tuberculosis of the "exudative" type, that is those with fairly recent active tuberculous infiltration or consolidation, with little or no fibrous tissue reaction. The more tendency there is to fibrosis and cavitation, the less likely is "Sanocrysin" to be present in sufficient concentration in the diseased area to exert any bactericidal effect. Only patients in the last stage are excluded, but organic disease elsewhere, especially of the kidneys, is a contraindication.

The three patients reported here have either failed to improve or become worse after other treatment.

One class of patient is peculiarly suitable. When the process is controlled in one lung by artificial pneumothorax, but later disease occurring in the opposite lung would necessitate abandonment of the collapse therapy, "Sanocrysin" can check this fresh activity. This is well illustrated by the skiagrams of the first patient.

The other two patients have failed to improve under sanatorium treatment—the disease is still alive with tubercle bacilli in the sputum, occasional pyrexia and extensive pulmonary signs.

"Sanocrysin" is a white crystalline powder; it is given intravenously in distilled water in increasing doses of from 0·1 to 1·0 gramme at from four to seven days' interval. A careful watch must be kept for reaciton and for complications. Hospital residence, of course is necessary.

In the patients shown judgement on the value of "Sanocrysin" is impossible. They are exhibited partly at the wish of the Medical Superintendent and partly to bring under the notice of members a new treatment for pulmonary tuberculosis which, while not yet in the same class of specific remedies as "Salvarsan," has in other parts of the world, particularly Europe, given very promising immediate results.

[1] The patients described herein were shown at a meeting of the New South Wales Branch of the British Medical Association on August 11, 1927.

CASE I.—K.R., aged twenty-three years, suffered from hæmoptysis eight months ago and this was followed by extensive left-sided tuberculous infiltration. Two months later further hæmoptysis occurred with high fever. The hæmoptysis was controlled by artificial pneumothorax and the condition improved, the fever subsiding.

In May signs of activity in the right lung appeared and "Sanocrysin" treatment was commenced. After six weeks X ray examination showed that great improvement had taken place.

The patient had high fever for one week recently, but no change in chest signs may be noticed. They are probably due to tuberculous activity. Now he is very much better. No tubercle bacilli can be found in the sputum. Artificial pneumothorax is being maintained.

CASE II.—R.S., a woman, aged thirty-five years, gives a history of pleurisy, cough and sputum, at times blood-stained. In September, 1926, she was sent to a sanatorium and improved for while, but had repeated febrile attacks and was sent out with the fever uncontrolled. In May, 1927, there was clinical evidence of extensive disease in the right lung. X ray examination suggested bilateral disease. "Sanocrysin" was given in successive doses of 3·3 grammes. The patient became afebrile and was feeling well, but she developed a toxic rash and albuminuria which have persisted and further treatment has been postponed. So far there has been no definite improvement, which could not be attributed to rest in bed. The chest signs are certainly fewer.

CASE III.—A.H., a woman, aged twenty-one years, was for six months in the sanatorium at Thirlmere early in 1926 and was sent out with repeated hæmoptyses. At the Royal Prince Alfred Hospital artificial pneumothroax was attempted, but no collapse was obtained. She was then sent to "Bodington" where she remained for eight months. She suffered from pleurisy on two occasions and left there unimproved with frequent pyrexia.

In June, 1927, extensive disease was present with cavitation in the right lung; the condition of the left apex was doubtful. "Sanocrysin" treatment was commenced on June 29 and injections were given at five day intervals; they are still being continued.

On July 15 artificial pneumothorax was again attempted, this time with some success. The base of the lung was now collapsed and the apex was adherent. The patient is afebrile and feeling much better.

DISLOCATION OF SHOULDER JOINT WITH NO HISTORY OF INJURY.

By J. FORBES MACKENZIE, M.B., Ch.B.,

Surgeon to In-Patients, Saint Vincent's Hospital, Melbourne.

THIS case is of some interest from the medico-legal point of view.

Miss K., aged fifty years, has always been very delicate and anæmic, but not tuberculous. Her body is badly affected by the presence of innumerable papillomatous fibromata, many of which are pigmented.

On the night of July 7, 1927, her mother who shares her bed, was awakened by some movement of her daughter and states that she found her stretched out rather rigidly with her eyes staring and looking as if she was "having a fit." The patient was seen by a colleague of mine who told me that she looked as if she was suffering from an anginal attack, as she complained of præcordial pain and pain down the left arm. He administered morphine.

I saw her next morning. Her temperature was 38·9° C. (102° F.) and her pulse rate 80 in the minute. She complained of intense pain in the left shoulder and left side. She would not let me touch her shoulder or left arm and was suffering very severely, the most sensitive spot being about five centimetres (two inches) proximal to the elbow point. There was also a faint pleuritic friction sound at the base of the left lung laterally.

The tentative diagnosis made by me was osteomyelitis of the upper end of the left humerus with perhaps a lung embolus. Under sedatives and aceto-salicylic acid her temperature subsided, but the pain continued.

After about six days the pain was so much easier, although considerable, that I was able to feel around the shoulder more carefully. The disturbance of locality of surface markings so interested me that, telling her family that I thought the shoulder must be dislocated, I had an X ray examination made next day and this confirmed my diagnosis of an anterior dislocation of the humerus (subcoracoid). This I reduced under an anæsthetic with very rapid relief.

The interest of the case lies in the fact that there was no history of injury, she had not been out of bed, she had never had a dislocation previously and had never had a fit previously. The temperature next morning with the pleurisy and my colleague's description of the apparent anginal attack masked the correct diagnosis.

JACKSONIAN EPILEPSY.[1]

By F. GUY GRIFFITHS, M.D. (Sydney),
Honorary Physician, Royal North Shore Hospital, Sydney.

THE patient, J.F., aged forty years, a married man and a gardener, was admitted to hospital on July 4, 1927. He complained of having had fits for a period of four months subsequent to receiving a blow on the left side of the head. The first fit occurred six weeks after the blow which had been given with a bottle.

Inquiry into the patient's family history revealed nothing of importance. His previous personal history is clear; he denies having suffered from syphilis.

Prior to his admission the patient had six fits. These occurred at irregular intervals, the intervals varying from one to six weeks. The first fit occurred four months and the last two weeks before admission. The patient experiences a definite aura and this takes the form of mental confusion and apprehension. Sometimes motor aphasia occurs and sometimes loss of power in the left arm and leg precedes sudden loss of consciousness. The patient falls when he loses consciousness, but on only one occasion has he hurt himself by the fall, the injury consisting of a slight abrasion of the nose in the second fit. He is told by his friends that he struggles and froths at the mouth while he is in the fit. On no occasion has he passed urine or fæces involuntarily during a fit. The period of unconsciousness has gradually increased from five or ten minutes in the first fit to forty-five minutes in the sixth.

It was found on the patient's admission to hospital that the right pupil was slightly larger than the left; they have been equal on several subsequent examinations. Both pupils reacted to light and no nystagmus was present. The other cranial nerves were normal. When the patient held his left arm out, it manifested a definite coarse tremor which was not intensified by purposeful movement. The power of the left arm was slightly less than that of the right and the power in the left leg was very slightly less than in the right. No disturbance of sensation was present and the reflexes were normal. The other systems were clear.

Two days after admission the patient had a series of four fits within two hours. He told the ward sister that he was going to have a fit and the fit was observed. He became unconscious and cyanosed and frothed at the mouth. All his muscles contracted. The knee jerks were exaggerated and the plantar reflex was flexor in type. The eyes deviated to the right during part of the fit. He did not pass urine or fæces, nor did he injure himself. After being unconscious for ten minutes he regained consciousness, spoke to the resident medical officer and answered questions rationally. The three other fits were similar in nature and in duration. The patient had amnesia for the whole period from the commencement of the first fit until he regained consciousness after the fourth fit. He slept badly that night and complained of severe frontal headache the next day. The headache disappeared gradually in the course of a day or so.

Several special examinations have been made. The ocular fundi have been examined and appear normal in all respects. X ray examination of the cranium reveals what is described as a suspicious crack over the left parietal bone; this crack is suggestive of an old fracture in this region. The Wassermann test and Kahn's flocculation test have been carried out and no reaction has been obtained with either.

No further fits occurred after those which took place two days after the patient's admission, until August 6, 1927, although on one occasion he said that he felt an aura. On August 6 his left arm and leg began to twitch violently. This came on without any warning. He was in the bathroom at the time and called out. He walked back to his bed with assistance. Soon after he got there the twitchings stopped. He was conscious all the time. He had amnesia from the time that the twitchings started until he got back to his bed. The tremor of his arm gradually ceased and the voluntary control over the limb gradually returned. He has been treated with bromide of potash. One colleague has advised the performance of a surgical operation.

The points of interest in this case are:

1. The coarse tremor and weakness of the left arm and leg.
2. The convulsions with loss of consciousness, aphasia and amnesia.
3. The history of a blow over the left parietal bone and the radiological evidence of fracture in that situation.
4. The possibility of injury to the brain on the right side by *contrecoup*.
5. The possibility of psychoneurosis.

[1] The patient described herein was shown at a meeting of the New South Wales Branch of the British Medical Association on August 11, 1927.

Reviews.

PERIODICAL HEALTH EXAMINATION.

THE object of Dr. Fisk and Dr. Crawford's book is to urge the desirability of periodical medical examination of the general public with a view to the early recognition of disease and the adoption of suitable treatment.[1] This excellent idea was first advanced by Horace Dobell over sixty years ago and the same idea runs through much of the later writings of the late James Mackenzie. Undoubtedly the plan is a good one, could it be carried out universally, but at present it seems rather a counsel of perfection, unattainable except by compulsory legislation and perhaps not even then. For a lesser field of economic usefulness, in the persons whose lives are already assured in assurance companies, it might be carried out with benefit both to the company and the assured. Indeed this has already been done to a limited and, we believe, successful extent in America. The matter was carefully considered in Sydney by at least one large insurance society, about three years ago, but the practical difficulties have so far prevented its execution. However, we heartily agree with the authors of this book that the principle is excellent and the results probably would be equally so. As to the matter of the book itself it is careful, meticulous and correct, yet it has the fault of all such works—it tries to do too much. It complicates with minutiæ an examination which in the nature of things ought to be very simple and uncomplicated, and becomes indeed a kind of compendium of diagnosis rather of the tabloid variety. It is ungracious, in the face of so much evident care and exactitude, to make adverse criticisms, when really there is much to admire and commend. Still, we must add that for such an examination as is required, no very special monograph on the subject is needed. Any decently educated practitioner with an average amount of common sense surely could do all that is needed without a special book of instruction on the matter. The chapter, however, on "Counselling," that is, giving general advice against some of the lesser and more common forms of illness, is to be entirely commended.

[1] "How to Make the Periodic Health Examination: A Maunal of Procedure," by Eugene Lyman Fisk, M.D., and J. Ramser Crawford, M.D.; Foreword by Major-General Merritte W. Ireland; 1927. New York: The Macmillan Company. Imp. 8vo., pp. 393, with illustrations.

The Medical Journal of Australia

SATURDAY, SEPTEMBER 10, 1927.

References to Medical Literature.

IT is generally acknowledged that the first stage in any medical investigation should consist in the study of the existing literature on the subject. Unless the experience of others is utilized, much valuable time may be wasted. In Australia there is a serious difficulty for workers who undertake research. No great reference library exists. Scattered about the Commonwealth are a few indifferent medical libraries in which the better known medical periodicals and some medical books are to be found When a medical practitioner wishes to study the literature of a special subject, he usually finds that at least one half of the journals containing articles on that subject cannot be procured without a long wait. A search in the *Index Medicus*, in the Index Catalogue of the Library of the Surgeon-General's Office and from now onwards in the Quarterly Cumulative *Index Medicus* of the American Medical Association will reveal the titles of all articles that have appeared and the journals in which they have been published. The list, however, is relatively useless unless the journals can be obtained within a reasonably short time. Out of this difficulty has arisen an expedient which should be regarded as a bad habit. It is to rely on abstracts of articles in one or other of the larger journals. The objects for which abstracts are published are twofold. In the first place they serve to give a general idea of the advances in medical science. In the second place they give an indication whether or not the full article should be consulted by those making a special study of a particular matter.

Authors of articles offered for publication to this journal frequently neglect to verify the references to articles and books set out in the course of their articles. If the lists appended to the articles are intended merely to impress the reader with the studiousness of the author, their publication is not justified. At times an author includes in his list references to French, German and Italian articles copied so inaccurately that we are suspicious that the originals have not been read and, had they been read, would not have been understood. The frequency of errors in these lists is so great that it has become necessary in the interests of our readers to endeavour to verify each reference in the office of this journal. This work is time-consuming and is often very difficult. For example, an author appended a list of six articles with the authors' alleged names to his article. The names were incorrectly spelt in two instances, the name of the journal was wrong in one, the date was omitted twice and was incorrect once and two of the articles could not be traced. Even if this be an extreme case, it reveals that the references given to some of the articles are valueless.

The practice of discussing the literature of a subject should be retained by authors. It has a high didactic value and must prove of interest and importance to serious students. But authors owe it to their profession to take trouble and care in handling literature. When the information is gathered from the original source, the initials and surname of the author, the title of the article, the name of the journal with date (day, month and year) and the number of the first page of the article should be given. If the originals are not available and the author of the article is compelled to rely on an abstract that has appeared in some other journal, he should be frank and inform his readers of the fact. Under these circumstances the form should be as follows: In the first place the reference should be given as set out above as fully and as correctly as possible. Then should follow the words: "abstracted in" with the name and date of the journal in which the abstract appeared. This expedient, however undesirable, must be accepted when the original is not available or when it is in a language that the author has not mastered. If the article is one of importance, it is usually possible to obtain a copy from the publishers or a reprint from the author. The language difficulty can be overcome by seeking assistance from a colleague who is competent to make a translation. In

Europe there are at all times medical journalists willing to undertake translations of this kind for a reasonable fee.

To sum up we would ask practitioners who submit articles to this journal for publication, to be more careful in compiling lists of references. A definite sense of morality should be developed. Some persons of otherwise high integrity do not hesitate to retain a borrowed book or pencil. It would seem that some otherwise honest men pretend that they have read an article that has not been within sight. Perhaps these few words may stimulate Australian authors to take pains to achieve accuracy in this respect.

Current Comment.

"INSULIN" AND THE TOXÆMIAS.

DIABETIC patients whose diet is carefully regulated and who possibly receive a regular dose of "Insulin," may live in comparative comfort for lengthy periods. The majority of diabetics die of some intercurrent infection and not of their diabetes. Since the introduction of "Insulin" clinicians have recognized that the advent of an infective condition generally necessitates an increase in the dose of "Insulin." Sometimes indeed the action of "Insulin" seems to be entirely suspended. There are several possible explanations of this failure of "Insulin" to reduce the patient's hyperglycæmia. In the first place the injection may have a direct effect on the remaining islands of Langerhans and inhibit the production of insulin. It would thus be necessary to give more "Insulin" to make up for the temporary shortage from the pancreas. While this is an attractive hypothesis, it does not explain what happens when injected "Insulin" does not produce its usual effect. A second possibility is that the products of the action of the infecting organism may exert a chemical action on the "Insulin" and render it inert. A third possibility is that the injection produces a metabolic change which will not itself respond to "Insulin" or which inhibits its action. This question has been the subject of an experimental investigation by R. D. Lawrence and O. B. Buckley and they have come to the conclusion that the most likely explanation is that a metabolic condition is produced which will not respond to "Insulin" in the usual way.[1] Rabbits fed on oats and bran mixture with abundance of cabbage were used for the experiments and the response of the blood sugar to "Insulin" was observed both before and after the injection of diphtheria toxin. The dose of diphtheria toxin varied between 0·001 and 0·025 cubic centimetre per kilogram of body weight and the dose of "Insulin" used was small, generally one clinical unit. The rectal temperature was observed throughout the experiments. Selected examples of the results obtained are given and it is stated that no contradictory findings were obtained in other experiments. Thus, it is seen in five protocols that the action of "Insulin" was reduced or absent in five rabbits. The fall in blood sugar after the toxin was always less than on the control day and in no instance did it reach such a low level. The initial fasting blood sugar varied greatly and it was mostly when the fasting sugar was low that "Insulin" action was diminished or absent. In three rabbits "Insulin" seemed to stimulate a temporary rise in blood sugar. Lawrence and Buckley point out that in the diabetic "Insulin" produces a slow lowering of the blood sugar, maximal in the third or fourth hour, whereas in a normal man or rabbit the drop is greatest in the first hour and recovery usually takes place in the second or third hour after small doses. The delayed fall in blood sugar was seen in most instances when the control day was compared with subsequent days. "Insulin" seemed to act better during the febrile reaction to the toxin than when the fever had disappeared. In every rabbit in which a slow death after from three to ten days days was observed, a "prelethal" rise in blood sugar occurred. Ergotamine was found to control this prelethal rise and to reduce the blood sugar to normal. The drug was used in the form of "Fermergin," a preparation which contains one milligramme of ergotamine tartrate in one cubic centimetre. It was also noticed that in several rabbits a rise in blood sugar was accompanied by a fall in temperature. In one animal, for example, this rise in blood sugar occurred three and in another two hours after a dose of "Insulin." This phenomenon did not seem to be connected in any way with the action of diphtheria toxin.

The organs of some of the rabbits were examined histologically and definite abnormalities were found. Besides cloudy swelling and fatty changes in the liver and kidneys the thyreoid and adrenal glands were greatly changed. Thus, in the thyreoid gland congestion, visible even to the naked eye, was found together with disappearance of the colloid, frequent necrosis of the alveolar cells and destruction and confluence of many of the alveoli. The adrenal gland was characterized by partial disappearance of the lipoid and in two rabbits the lipoid had disappeared completely. Lawrence and Buckley regard it as quite clear that the toxin has produced exhaustion and degeneration in these organs, conditions which are usually preceded at some stage by stimulation and overactivity. Unfortunately they did not realize that these glands were of such importance in their investigations and they used no special fixing and staining methods to show chromaffin *et cetera*. It is on their observations on the thyreoid and adrenal glands that the whole of their work depends, for they conclude that there is in the thyreoid and adrenal glands the "thyreoid-adrenal apparatus," a mechanism which, when stimulated, is a direct physiological antagonist to

[1] *The British Journal of Experimental Pathology*, February, 1927.

insulin action. They hold that this mechanism is stimulated by toxæmias and particularly by bacterial infections and that it affords an adequate explanation of the increase of severity in diabetes and the failure of "Insulin" action either relative or absolute in these conditions.

In order that this view may be accepted, it will be necessary to prove, firstly, that pathological changes take place in the thyreoid and adrenal glands as a result of bacterial infections and, secondly, that the blood sugar of normal individuals is altered as a result of infections. Lawrence and Buckley hold that these findings have been established. They refer to Cramer's work on the effects of fever and infections on the "thyreoid-adrenal apparatus" and to Goldzieher's statement that congestion with or without hæmorrhages, thrombosis and necrosis and the like are of constant occurrence in the adrenal glands in septic infections in contrast with the rarity of such changes in other organs. Adrenalin is known to play an important part in the carbohydrate metabolism. Glycosuria results from the intravenous injection of adrenalin. Robertson explains this by the statement that the power of the liver to polymerize glucose is apparently rendered deficient and the normal equilibrium between glycogen and glucose in the liver tissues is shifted in favour of glucose. In the presence of a minute quantity of adrenalin the pH of the blood and presumably of the tissues of the liver which was previously unfavourable for the hydrolysis of glycogen, become optimal, so that hydrolysis occurs with abnormal rapidity, the balance between synthesis and hydrolysis is upset and the blood becomes charged with sugar. It is thus obvious that the subject opened up by Lawrence and Buckley is one of great magnitude and concerns the carbohydrate metabolism of the body as a whole. They believe that there are two opposing factors regulating carbohydrate metabolism. On the one hand insulin, produced by the stimulus of the ingested carbohydrate and a raised blood sugar, stores this sugar as glycogen in the liver and muscles and at the same time probably checks the new formation of sugar from protein and perhaps fat. On the other hand, the "thyreoid-adrenal apparatus," stimulated by toxæmias and a number of other factors, mobilizes sugar from stored glycogen and hastens the production of new sugar from other substances. If this conception be correct, the clinical manifestations in diabetes complicated by infections would depend on the degree of reaction caused by the infection, whether "Insulin" can lower the blood sugar at all or whether it is entirely antagonized in this regard by the opposing mechanism. At the same time it must be remembered that it has not been shown that in a diabetic the phenomenon under discussion is not partly due at least to a direct effect on the remaining islands of Langerhans. It is inconceivable that an infection which is powerful enough to call into play a "thyreo-adrenal apparatus" and to produce structural changes in these glands, would have no effect on the metabolism of cells in the pancreas which must be regarded as having a lowered resistance.

RETINAL PETECHIASIS.

IN January, 1927, H. Moreland McCrea read a paper[1] before the Ophthalmological Section of the Royal Society of Medicine on what he called retinal petechiasis. He described this as a lesion in the retina causing blindness, but differing from true hæmorrhage in that it is an exudation of blood without rupture of the vessel. It also differs from true hæmorrhage in its pathology, its clinical history and appearance, its treatment and in fact that recovery may follow treatment. He referred to the work of Krogh, of Copenhagen, who has shown that the capillary walls can be subjected to stimulation, that the response may be in the nature of contraction or relaxation and that the latter may result in failure of the constituents of the blood plasma to be retained in the vessels. McCrea believes that toxins in the circulation may produce the stimulus necessary for this relaxation and he holds that this is proved by the facts that it is possible to discover sources of infection, that removal of the focus results in arrest of the process with either alleviation or cure and that recurrence of infection gives rise to fresh and similar manifestations in the retina. He gives clinical histories which demonstrate these points. The sites of the focal infections include the teeth, tonsils, accessory sinuses, the ethmoid and the urinary tract. The youngest of his fifteen patients was a woman, aged forty years, and the oldest was eighty-three years of age.

While McCrea draws a sharp distinction between true hæmorrhage and exudation of blood and is not prepared to initiate an academic discussion on the word hæmorrhage, it must be pointed out that the latter term includes the passage of blood through the capillary walls by diapedesis. G. A. Sutherland in discussing McCrea's paper said that if this condition was, as McCrea held, a clinical entity, it was presumably also a pathological entity. As a matter of fact McCrea's pathological observation had been confined to his ophthalmoscopic findings. He has not had the opportunity of subjecting an affected eye to microscopical examination, nor has he made any biochemical investigations in any of his patients. For example, it would be interesting to learn whether the calcium content of the blood was altered in any of them. The possible relation of the condition to *purpura hæmorrhagica* requires consideration. This condition undoubtedly calls for the careful attention of pathologists, physicians and ophthalmic surgeons. It is a pity that before more is known about, he has entered the realm of speculation. In another article[2] he refers to observations by Kidd on similar findings in the bladder and goes so far as to suggest that hæmatemesis and melæna may be caused by petechiasis as a result of septic foci and that petechiasis may end in actual ulceration in the stomach, duodenum and intestines and that metrorrhagia and menorrhgaia may be occasioned by it.

[1] The *Proceedings of the Royal Society of Medicine*, March, 1927.
[2] *The Lancet*, June 18, 1927.

Abstracts from Current Medical Literature.

SURGERY.

Surgery for the Relief of Pain.

R. LERICHE (*La Presse Médicale*, May 4, 1927) sums up the present position in regard to surgery for the relief of pain. Of this the operative treatment of trigeminal neuralgia is the only one in which a certain result may be anticipated. When pain is closely localized to the region of the fifth nerve and paroxysmal in nature, retrogasserian neurectomy is a certain cure and the risk is at present negligible. This operation is contraindicated when the pain is continuous and not strictly limited to the distribution of the fifth nerve, if undertaken, it always fails and in such cases operations on the sympathetic are disappointing and usually fail. The author believes that *angina pectoris* will in the future become one of the most certain indications for operations on the sympathetic system. It is certain that electrical stimulation of the lower part of the stellate ganglion in a healthy man causes a crisis in all respects similar to angina and that infiltration of this ganglion with local anæsthetic solution arrests angina, when present. Angina can be cured, if the pathological changes are not permanent and extensive. It may be objected that these patients are bad subjects for operation, but the same objection could have been raised against the operation of prostatectomy twenty years ago. Two fundamental problems have yet to be worked out, the indications and the most suitable operation. Reports of only one hundred and ten operations have as yet been published and these are insufficient to justify the formation of any definite opinions. The author is definite that ablation of the cervical sympathetic, on one or both sides, as proposed by Jonnesco, is both useless and extremely dangerous. The other choice is confined to operations involving the stellate ganglion, although it has been shown that the condition can be cured without sacrificing the ganglion. The operation can thus be limited, but how and to what, it is difficult to say. Whether the superior cervical chain should be removed in the course of a low "*ramicotomie*," whether the superior cervical ganglion alone should be removed or whether merely a low "*ramicotomie*" with division of the sympathetic chain below the stellate ganglion should be performed, it is impossible to say. The author quotes the histories of four patients, three of whom have been cured by the latter procedure. The present results of the surgical treatment of angina are encouraging and are better than they were in the treatment of trigeminal neuralgia twenty years ago. For the present the author recommends the procedure of Daniélopolu which consists of excision of the superior cervical chain and low "*ramicotomie*." The position in regard to Raynaud's disease is very similar to that in angina. The difficulty arises from the multiplicity of types and ignorance of the mechanism. By unilateral and preferably bilateral periarterial sympathectomy lasting cures have been effected, but complete failures have occurred. In those cases in which there is cyanosis, but never vaso-constriction, in which cold water relieves and hot water aggravates, periarterial sympathectomy fails and ramisection usually succeeds. Primary operation on the ganglia is too drastic. In the treatment of causalgia periarterial sympathectomy with excision of the scars is generally satisfactory, except in those cases in which the wound has obliterated an artery; in these cases the obliterated segment should be removed. If failure occurs, section of the *rami communicantes* is indicated. In ascending traumatic neuritis, periarterial sympathectomy is useless, division of posterior roots is not very effective and amputations aggravate the condition. In these cases the author has done total cervical "*ramicotomie*" from the second cervical to the fourth dorsal segments with satisfactory results. Painful amputation stumps are seen not only in war time. Three main types may be distinguished. Those in which pain occurs on pressure with irradiation along a definite nerve distribution, are usually relieved by freeing, neurectomy or resection of the nerve involved. Those in which there is constant discomfort with exacerbations of pain and which are associated with vasomotor disturbances of the part, are relieved by periarterial sympathectomy. In the third type the patients complain of pain in the amputated limb. In these cases all peripheral measures, such as reamputation *et cetera* invariably fail, whilst posterior root section often fails. Although the author introduced chordotomy into France, he does not like it for this condition and prefers section of the *rami communicantes*. This has given good results in four recent cases. That intervention should be early is of the greatest importance. In the crises of tabes surgery is justified only in exceptional cases. In regard to the surgery of the gastric nerves, the author states that he is drawn more to ramisections than to the denervation of organs which appear to him to be but disguised mutilations. Painful dysmenorrhœa and sclero-cystic oophoritis can be cured by periarterial sympathectomy of the hypogastric arteries or the less difficult procedure of division of the presacral nerves. In the treatment of inoperable cancer two types of operation are available, operations on the cord, such as posterior root section, chordotomy and total transection of the cord and operations on the sympathetic plexuses around the pelvic arteries. On principle, where possible, operations on the sympathetic nerves are to be preferred to begin with. They are often very effective and allow exploration of the abdomen at the same time. In these cases the author, after liberating the hypogastric and iliac arteries as far as the bifurcation of the aorta, performs a periarterial sympathectomy as far as possible and then cuts the presacral nerve. Occasionally on laparotomy, it is found that the pain is due to an unexpected cause, such as a hæmatosalpinx or a hydronephrosis. If these operations fail chordotomy is the most suitable operation, as posterior root sections are often insufficient. Total transection of the cord is now replaced by bilateral chordotomy.

Clinical Aspects of Primary Carcinoma of the Pancreas.

B. M. FRIED (*Boston Medical and Surgical Journal*, April 21, 1927) makes some observations on the clinical aspects of primary carcinoma of the pancreas. It is difficult to differentiate primary carcinoma of the pancreas even in advanced stages from hepatic tumour and inflammatory conditions of the pancreas. A fact contributing to the complexity in the diagnosis is the topography of the organ and the proximity of its various parts to other important structures such as the common duct, inferior *vena cava*, renal veins and aorta. Cancer may take its origin in any part of the organ. In the early stages cancer of the pancreas, like cancer elsewhere in the body, runs a silent course; the duration of this silent course is not known. Bard and Pic were the first to describe accurately the clinical symptomatology of cancer of the head of the pancreas and formulated the cardinal symptoms: (i) a deep, progressive, painless jaundice, (ii) a distended and palpable gall bladder, (iii) cachexia which runs a rather rapid course with loss of weight and weakness. Cancer of the body of the pancreas is relatively less frequent than that of the head. From the standpoint of symptoms it appears to be altogether a different disease. It is characterized by the most severe and excruciating pains in the absence of icterus. It is one of the most painful of abdominal diseases. At the onset the pain comes on in paroxysms in the epigastrium and later is more constant. It is sharp, not related to meals, frequently girdle in character, resembling the *crises gastriques* in tabes and radiating to the spine or the thorax. There is frequently a diarrhœa accompanied by a colicky pain and tenderness, but no jaundice. Numerous explanations have been evolved for this remarkable pain. By some it is regarded as a pancreatic perineuritis, by others as due to a stasis of pancreatic secretion. The most plausible idea is that given by Chauffard who attributes it to pressure and possibly to involvement by the tumour of the solar plexus.

Malignant Tumours of the Testicle and Scrotum.

MILEY B. WESSON (*American Journal of Surgery*, March, 1927) deals with the malignant tumours of the testicle and scrotum and their treatment with conservative surgery and deep X ray therapy. Heredity seems to play little if any part in this disease and trauma is of doubtful im-

portance. Sexual activity may be a factor. Clinical recognition is primarily a matter of exclusion, as the tumours present no pathognomonic signs or symptoms. The conditions to be considered in differential diagnosis include gumma, hæmatocele, hydrocele and tuberculosis. The presence of a Wassermann reaction does not necessarily indicate that an enlarged testis is gummatous. If intensive antisyphilitic treatment does not cause immediate disappearance of the tumour, exploration is indicated. The hydrocele present with solid tumours should never be aspirated, for if the tumour is injured, the growth will be stimulated and local transplantation of malignant cells will occur. All swellings of the testicle must be considered malignant until proved benign. Simple orchidectomy is never justified in malignant tumours. Metastases may occur with the beginning of tumour growth and quickly pass through the primary field of lymph glands to the "opposite primary field" or into the "inoperable secondary field." Prognosis is good if there are no metastases or even in seminomas, if orchidectomy is followed by thorough radiation. It is bad in all teratomas. The radical operation must be done in all teratomata as radiation does not kill these cells, and it is possible that the metastases have entered the primary field and not gone beyond. There are some serious objections, however, to the radical operation and there is an operative mortality of 12·4%.

Cholecystitis, the Cholesterol Gall Bladder and Silent Gall Stones.

F. H. LAHEY (*Boston Medical and Surgical Journal*, April 28, 1927) discusses the classification, pathology and treatment of chronic cholecystitis, the cholesterol gall bladder and silent gall stones. Considerable advances have been made in the chemical and radiographic study of diseases of the gall stones. The gross appearance of "chronic cholecystitis" seen at the operating table is of three types. In the first the walls of the gall bladder are only slightly thickened and no abnormality is found in the mucosa, but pericholecystic adhesions are present. In the second the gall bladder walls are definitely pale and thickened. In the third the exterior of the organ appears normal, often no adhesions or definite thickening is present, but the interior presents the well-known "strawberry" mottling. In the first the symptoms are in all probability the result of mechanical interference with the function of the gall bladder, duodenum and pylorus, the effect of adhesions rather than of infection of the gall bladder itself and a good result cannot be expected from cholecystectomy. In the second type, infection is almost certainly present and removal of the gall bladder will yield a high percentage of satisfactory results. The third variety is a non-calculous gall bladder producing definite symptoms. It will be responsible for cholesterol stones and good results will follow its removal. The diagnosis of chronic cholecystitis by cholecystography should be arrived at only when cholecystographic findings may be quite definitely correllated with clinical symptoms. All other disorders which may simulate cholecystitis should be eliminated by investigation and medical treatment. The estimation of bilirubin or blood cholesterol is of no value. The indications for cholecystectomy in chronic cholecystitis are: (i) the presence of symptoms, such as nausea, eructations, abdominal distension, headache and indefinite abdominal pain, (ii) failure of investigation and medical measures to demonstrate other lesions which might cause these symptoms, (iii) persistence of the symptoms in spite of medical treatment, (iv) suspicious X ray findings. It is in the discovery of the so-called silent gall stones that cholecystography has its greatest value.

Brachial Neuralgia.

J. WILDER (*Wiener Medizinische Wochenschrift*, June 25, 1927) discusses some of the uncommon causes of brachial neuralgia. It may be due to a cervical rib. This congenital anomaly generally causes no symptoms for a considerable period until some slight trauma or infection occurs. Frequently the only sign is a vasomotor disturbance, for example unequal radial pulses or gangrene. Pain or atrophy may occur. These symptoms are often due not to the accessory rib, but to compression of the artery or nerves by the associated ligament. Surgical removal is the only treatment. Another cause of brachial neuralgia is vasomotor disturbance of the brachial artery. On the left side it is frequently mistaken for *angina pectoris*. Pain is felt along the course of the artery, the blood pressure is lowered on one side and the radial pulses are unequal. The difference in colour and temperature of the hands is pronounced. While salicylates have no effect on the pain, it is relieved by atropine and other vasodilators. Finally osteoarthritis of the cervical vertebræ may be overlooked especially in the region of the fourth to the seventh vertebræ. This condition is due to some toxic process or traumatism. The treatment consists in suspension, light massage and gymnastics unlike that employed for tuberculous conditions.

Surgical Treatment of Epithelioma of the Lip.

WILLIAM M. SHEDDEN (*The Boston Medical and Surgical Journal*, February 17, 1927) analyses the results of the surgical treatment of epithelioma of the lip from the Massachusetts General Hospital and the Cancer Commission of the Harvard University during the four year period 1919 to 1923. The analysis deals with one hundred and seven cases and the author compares his results with those of a similar analysis, made by Simmons and Daland over the ten years previous to this, making an analysis of two hundred and ninety-four cases in all. The operations are divided into two groups, radical and incomplete. The radical operation includes local removal and dissection of all glands in the submental and submaxillary triangles as far as the bifurcation of the carotids. The incomplete operation consists of local removal only and similar incomplete operations. The radical neck dissection was found to give three year cures in 76% of patients. If the growth is definitely more than one centimetre from the midline, a unilateral neck dissection can probably be safely done, a tumour near the mid-line requires operation on both sides. When the glands were found to be not involved on microscopical examination, the percentage of three year cures was 87%; the percentage was 42 only when the glands were involved. Only in one-fifth of the cases in which glands were palpable on clinical examination, was cancer found in these glands when they were removed at operation. Although palpable glands do not necessarily mean cancer, metastases can exist in glands which are not palpable. Separation of the tumours into pathological groups, arranged according to the relative malignancy of the tumours, as recommended by Broders, is apparently of distinct value as far as prognosis and choice of operation are concerned.

The Treatment of Bronchial Fistulæ

ALBERT E. HALSTEAD AND HERBERT F. THURSTON (*The Journal of the American Medical Association*, March 5, 1927) review the literature on the subject of bronchial fistulæ and report a case in which successful treatment was adopted. Anatomically there are two types, the broncho-pleural and the broncho-cutaneous. A broncho-pleural fistula results with an accompanying pneumothorax, when a lung abscess ruptures into the pleural cavity; small fistulæ are sometimes encountered in treating an acute empyema and when operating for chronic empyema. Broncho-cutaneous fistulæ may exist in connexion with a chronic empyema, but are most often due to operative intervention in lung abscess or gunshot wounds. The most common type is the broncho-pleural occurring in conjunction with pulmonary tuberculosis and tuberculous empyema. These are not generally amenable to surgery. Broncho-pleural fistulæ occurring in the course of an empyema (non-tuberculous) generally close spontaneously when the empyema cavity closes. In broncho-cutaneous fistulæ, arising from abscess or gangrene of the lung, no attempt should be made to close the fistula until the abscess cavity has closed or the gangrenous tissue has sloughed and the cavity has become clean. After simple measures have failed, such as cauterization of the track *et cetera*, the rational procedure is to dissect out the fistulous track, to close the opening in the bronchus by a purse-string suture and to transplant sufficient fat to fill the depression in the lung and cover this with a flap consisting of skin, fascia and muscle from the chest wall.

ÆSCULAPIUS IN MANHATTAN.

AT times a lesson interpreted in fresh language loses its incisiveness and fails because the personality of the author is eliminated from the sentences. An article entitled "Æsculapius in Manhattan" appeared in *The American Mercury* of March, 1927. We found that Mr. Pringle had expressed himself in so delightful a manner that we determined to make an exception to our rule, which has never before been broken, and to reproduce this article in its entirety and in its original form.

Mr. Pringle has kindly consented to this course, as have the editors of *The American Mercury*. We desire to express our indebtedness to the author and the editors for their courtesy.

The great city of New York, having more hotels, night-clubs, theatres, head-waiters, door-openers, expensive ladies and other such luxuries than any other place on earth, is regarded as fair game in all the more Christian parts of the nation, and is the ultimate objective of every American go-getter who has something to sell for several times what it is worth. This is partly due, no doubt, to the eloquence and zeal of its advertising geniuses. "Know the New York market" is the tip they pass out to the out-of-town entrepreneur. The more fantastic the product, it appears, the greater are likely to be the sales.

The bootleggers, of course, discovered all this in the infant days of their craft. They found that rich and eminent New Yorkers were willing to travel down to the steamship piers at 2 o'clock in the morning, go through any amount of hocus-pocus and expense and emerge triumphant with a case of just-off-the-boat Scotch that had been trundled on the wharf that same evening from a redistillation plant. They knew that the same highly sophisticated metropolitans would motor far down the sand dunes of the Jersey coast, and there watch, by the light of flickering torches, the real thing being dug out of the sand—where it had been buried five or six hours before. All other American business men, whether they operate within or without the law, know where the gullible gather in the greatest number. There are more trusting souls in New York, they have learned, than victims of pyorrhea. Most of them, to be sure, are immigrants from Buffalo, Chicago, Kansas City and points West. Many others are not New Yorkers at all, even by residence, but parts of the town's vast floating population. But whatever their status, they are all easy to rook, and they have the cash.

This great truth has of late reached the ears of the medical profession.

If New York is willing to support an army of door-openers, hall-boys dressed like Bulgarian major-generals and hat-check girls, it is not remarkable that it is also properly receptive toward health specialists. So the go-getters of the scalpel and stethoscope pour in, and become part of the expanding group now cashing in on the real or imagined diseases of the metropolitan population. Sometimes they build up practices with celerity by splitting surgeon's fees, a device officially condemned by the profession but widely prevalent and almost never exposed. Or they get juicy commissions from *x*-ray laboratories or from the manufacturers of philtres and appliances. Sometimes they become financially interested in private hospitals with exorbitant rates. Whatever the process, the motto is always to charge whatever the traffic will bear. When they attain to affluence and dignity they draft resolutions for the medical societies denouncing the reprehensible tricks of those coming after them.

Hundreds of the men now in practice as healers in New York are quacks who have never smelled the perfumes of a medical college. In their varied ranks are practitioners of the following mystic sciences: æro-therapy, diet-therapy, mechano-therapy, physio-therapy, naturo-therapy, spondylo-therapy, quartz-therapy, geo-therapy, zodiac-therapy, and spectro-therapy. In addition there are the fake psycho-analysts, who specialize in love-sick ladies and gentlemen, the barbers who have become chiropractors, the hypnotists, the fat-reducers, the quack plastic surgeons, and the coloured practitioners who, with appropriate voodoo rites, cover their patients with hot herbs and leave them to bake for three or four days.

New York is, in brief, filled with medicine men, growing richer by the hour and apparently able to keep within the law and avoid arrest. The established medical profession, always conservative and usually unworried about abuses within its own ranks, has finally been forced to take action, and lately it supported the passage of a State law which forces doctors to register every year. It is now illegal for any but licensed practitioners to place M.D. after their names or Dr. before them. The ex-pugilist who runs a gymnasium can no longer advertise as Dr. John J. (Battling) O'Reilly. The statute is all-inclusive in its definition of the practice of medicine and declares a practitioner to be anyone who holds himself out as

> being able to diagnose, treat, operate or provide for any human disease, pain, injury, deformity, or physical condition and who shall offer to undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition.

Obviously this should limit the activities of the quacks to working under the direction of licensed physicians. But actually fat business men from down-town are still riding on electric horses in a hundred studios of health, and the obituary columns of the newspapers are still filled with tales of captains of industry who have perished of heart disease. The electro-therapists still operate apparatus approaching in awesomeness the electric-chair at Sing Sing. As long as these and the other miracle workers are allowed to have establishments the law is about as effective as the Volstead or the Mann Acts. The quack just starting in business often begins with a hairdressing parlor. Then he becomes a masseur and gives fat reduction treatments. Eventually he buys some machines that give out sparks or alluring light rays when a switch is pulled. He guarantees that anything under Heaven can be cured, so long as payments are made in advance. Thus his atelier blossoms out as an Institute of Health.

For years the New York business man was little concerned about his health or physical appearance. He was content to add to his bankroll and his weight at the same time. But more recently he has become convinced that even in the world of business no one loves a fat man. So he pores over Bernarr Macfadden's *Physical Culture*, does his daily dozen to the curt commands of the radio, and goes in for golf. In many cases, feeling that he cannot cope with the situation alone, he places himself in the hands of the physio-therapist. Gradually, in the name of efficiency, he has become a patron of gymnasia. These gymnasia are located at strategic points. Several are in the large office buildings near Wall Street, so that financiers, having wrestled all day with the rate of exchange, may conveniently engage in combat with the rising tide of corpulency. Some are in the big hotels. Others are in the outskirts of the city, where country air can be offered as an added inducement to the scientific pursuit of vim and vigor. It is in the business men's gymnasium that the electric horse, formally approved by President Coolidge a few years ago, is tethered. There, also, dwells the less excitable electric camel.

In many of the establishments ex-pugilists undertake to prescribe for obesity, indigestion, rheumatism, lumbago, gout and insomnia. The New York business man, a mighty czar in his own office, meekly places himself in the hands of a professor with cauliflower ears and a broken nose. He wheezes on the handball court for hours and allows himself to be beaten, slapped and bruised by rubbers who might earn money on the side, and maybe do, as sparring partners for Gene Tunney. He perches perilously on a Coolidge horse and gallops for dozens of kilowatt miles.

"The New York business man," lamented a city official who had been investigating this state of affairs, "is a boob once he has his clothes off. In his office he wears swell clothes and a vest with white braid. He's got a bunch of push-buttons and secretaries. He's the boss. Naked, he does whatever some plug-ugly in a gymnasium tells him to. He'll meekly obey orders, be slammed around and come

back for more. He isn't in shape for it and stands a fine chance of being hurt, but the fellow who runs the gymnasium doesn't know it. Why, up on one of the health farms outside the city they put a lot of fat old fellows on horses one cold Winter morning, galloped them for five miles and made them walk back on foot through the snow. It's a wonder they all didn't die!"

Thus the physio-therapists are doing nicely. One pays out $18,000 a year for rent alone. In several establishments business men pay a yearly fee of $1,000 each to be kept fit. The professors, being hustlers, watch business conditions carefully. A year or so ago they discovered that the fur trade was booming. A survey disclosed an increasing number of stout merchants in the wholesale fur district. Being affluent, they were attempting to avoid the excess profits taxes by eating as much as possible. Salesmen from the gymnasia called on them, holding forth on the dangers of obesity. These salesmen made many converts. That obesity is frequently a disease, that it is highly dangerous for anyone to reduce too quickly, that a 350-pound man is really ill—such facts do not worry the gymnasium directors.

II

Any New Yorker who is ill is apt to find himself in a mean fix. He is, to begin with, very unlikely to know much about the physicians in his neighbourhood: he is thus lucky if he does not call in a quack. And when he is fortunate enough to get a competent man he finds, if he goes to a hospital, that the costs are ruinously high. He learns that few if any of the hospitals make the slightest effort, even unofficially, to limit the fees charged by the surgeons who man them. At the Johns Hopkins, in Baltimore, a schedule is established which limits the amounts that may be collected from private patients. Surgeons with operating privileges at the institution cannot charge more, no matter how wealthy the patient or how complicated the case. But the medical profession in New York looks slightly ill whenever any such scheme is suggested for local adoption and moans about the vast quantity of charity work that it does. It is the theory in the town, occasionally put into practice, that the price of a major operation should be ten per cent. of the patient's yearly income. Actually, the surgeon usually gets whatever he can. He will often, like the realtor, shave his first quotation in order to get a case.

About 65% of the New York scalpel-wielders, I am informed in such reliable quarters that it is impossible to doubt the accuracy of the indictment, split their fees with the medical practitioners from whom they get their business. That is to say, the medical man who first tells the patient that surgical treatment is necessary receives from one-third to one-half of the amount ultimately collected by the surgeon. If the surgeon can do so safely, he simply adds this commission to the sum of his bill and so avoids paying it himself. Recently a young Manhattan physician, who has declined to indulge in this lucrative custom, sent a tonsilitis case to a fashionable throat specialist. Later in the day the specialist's secretary called him on the telephone.

"Thank you for that case," she said. "Dr. Blank always gets $400 for the operation."

The practitioner pretended that he did not understand. "That," he replied, "is a matter for him to arrange with the patient. I think she is quite able to pay the regular rate."

The distinguished surgeon's assistant coughed.

"Quite so," she persisted, "but he always lets the physician know that $400 is the basic charge. How much do you want him to add to the bill?"

Splitting fees is, of course, considered highly improper by the medical profession. The American College of Surgeons, to which most surgical men of any standing now belong, makes doing it ground for expulsion. Applicants for fellowship in the college must take the following oath:

> Upon my honour as a gentleman, I hereby declare that I will not practise the division of fees, either directly or indirectly, in any manner whatsoever.

And on the front page of the year-book of the college is this elaboration of the same idea:

> I pledge myself to refuse utterly all money trades with consultants, practitioners or others; to teach the patient his financial duty to the physician and to expect the practitioner to obtain his compensation directly from the patient; to make my fees commensurate with the service rendered and with the patient's rights; and to avoid discrediting my associates by taking unwarranted compensation.

Unfortunately the pledge is not binding on surgeons who are not fellows of the college. From time to time, at meetings of the various local medical societies, fee splitting is violently denounced. Dignified medics, with impressive whiskers and charming bedside manners, declare it a disgrace to the profession. But some of these very men, I am told, rose to opulence and eminence by being more amiable in the division of the spoils than were their surgical competitors.

The scheme, it is obvious, brings patients and prosperity most swiftly to the medicine man who has the best head for business and is the least handicapped by ethical pruderies. His trade, at bottom, is simply that of buying and selling sick people. The average patient knows nothing of what is going on. He gives himself to the surgeon recommended by his doctor, and the doctor booms the surgeon who has agreed to give him the best break on the bills. Some members of the profession, exceptionally honest and frank, attempt openly to justify fee-splitting. They point to the wide difference between the low rates paid to the family doctor and the large sum which the surgeon can demand for a half-hour of work. The medical man, moreover, builds up the surgeon's practice by his recommendations. Frequently, of course, the practitioner's favours are returned in kind. Divided, the surgeon and the doctor are apt to starve in New York. United, they prosper through profit-sharing.

Among my acquaintances is a young surgeon living on the upper West Side. He has adequate hospital connections, did some excellent work during the late war, and his professional standing and skill are unquestioned. In the neighbourhood in which he has an office there are plenty of affluent potential patients. During the first few months after he opened his shop several of the local medicine men dropped in, ostensibly to bid him welcome. Gradually they turned the conversation to the condition of the medicine business. All in all, they agreed, it was not bad. The weather had been raw and tonsilitis was prevalent. It was becoming increasingly fashionable for parents to have their children's tonsils removed. By the way, what proposition was the doctor willing to make with respect to their surgical cases? How about 40% of the returns from this business? The surgeon, recalling the oath of the College of Surgeons, replied that he did not split fees. His medical neighbors, arising to go, applauded his integrity and expressed gratification that so honest a surgeon had arrived to adorn the neighborhood. They would, indeed, remember him when patients needed surgical attention. He is still waiting for cases.

"I'll stick it out two more years," he remarked recently to a friend. "Then I'm going to be a success, too."

A vast amount of mystery and secrecy surrounds the whole business of splitting fees. Sometimes, but very rarely, the surgeon will instruct his patients to write two checks, one of which is to go to the medical man. This makes the patient aware of what is going on, and if he assents there is, perhaps, no ground for complaint. Another comparatively honest plan is for the surgeon to call in the practitioner as an assistant during the operation, in which case also his payment is made directly by the customer. But in the majority of cases the negotiations are as hidden as those between bootleggers and Prohibition agents. Payments are made in cash in the dead of night. One New York medical man received, last Christmas, a box of cigars from a surgical friend. Pinned to the top layer was a $500 bill. No questions were asked.

Many of the New York surgeons send their patients to private hospitals, operated for profit. This is partly because beds in the large quasi-public institutions are limited in number. But it is even more due to the fact

that the younger sort of surgeons, even when they have demonstrated their ability, find it difficult to obtain operating privileges at the hospitals of established reputation. Wealth or social and political influence play an important part in the appointment of staff men. There are no large "open" hospitals where any surgeon who knows his business may operate. The costs at the private hospitals vary greatly. Here, I am assured, is a fair example of the total bill for an appendicitis operation.

Room at $10 a day for two weeks	$140
Private nurse at $7 a day..	98
Board for nurse at $4 a day	56
Operating room fee	15
Anæsthetist's fee	25
Surgeon's fee	400
Total	$734

The surgeon's fee may be as low as $250 or as high as $2,500. It depends upon the current demand for his services, the financial condition of the patient, his gullibility, and the rake-off demanded by the family medical man.

A popular pastime of the medical profession in New York is to gather at the Academy of Medicine and inveigh against the growing number of quacks in the town, the idiocy of the public in trusting its health to them, and the terrible evils arising from their activities. No one, of course, will dispute the righteousness of these damnations. But I wonder whether the bewildered sick man, shipped from medical practitioner to surgeon and back again in return for a slice of his wallet, is not often forced into the hands of the quacks by coming to the conclusion that many of the so-called ethical medicoes are quite as bad. It may be that he has had enough of high fees, exorbitant hospital costs and erroneous diagnoses under the care of gentlemen who are members of all the medical societies. Thus he is driven to the quacks, who are cheaper.

The honest and high-class physician, in addition, alienates many of his less enlightened patients because he is quite properly unwilling to make promises. The quack will promise anything, as long as he is paid in advance. Not long ago a New Yorker in the last stages of cancer was told that he did not have a chance of living more than a few weeks. A fake healer soon got hold of him and said the verdict was silly. For $400, the man said, he could be cured. The money was paid and a series of treatments began. Within ten days the man was dead. His widow, destitute, attempted to get back the money, protesting that the pseudo-physician had contracted to effect a cure. A letter from the quack pointed out how unreasonable she was.

"Your husband broke the contract by dying," he wrote. He is still at his trade.

III

It is considered unethical, in New York as elsewhere, for the legitimate physician to advertise. This is part of the old tradition. The fakers, on the other hand, advertise widely. In New York they send out bales of circulars to carefully prepared sucker lists. They take space in the few newspapers that will print their stuff. Dr. Macfadden's magazines are excellent mediums for all the new schools of healers. His tabloid daily, the *Evening Graphic*, is very hospitable to them. The exponents of the advanced "sciences" known as physio-therapy, spectro-therapy, vibro-therapy and the rest also drum up business by having agents in hotels, barber-shops, beauty-parlours and hair-dressing salons. Often they get their start through the patronage of visitors from out of town. But the permanent population soon follows.

New Yorkers pride themselves that in their city things are done in a Big Way. If one doctor is excellent, twenty doctors are more to be desired. An institution with twenty different electrical machines is better than one with a solitary X-ray set and a single spark-shooter. This, perhaps is a reason for the current popularity of health institutions. Among the leaders in this field is Dr. Leonard Lincoln Landis, who runs the House of Health in a magnificent five-story edifice at 140 East 22nd street. Dr. Landis is more or less of an outcast from the ranks of the established medical men and glories in it. He has no use for their edict against advertising or for their enmity toward chiropractors. The latter, he says, are usually fakers, but sometimes have "golden hands by which they transmit the energy of their own personalities to others." Dr. Landis wishes to share his theories and experiences with his fellow doctors and has organized the American Association of Independent Physicians to spread them. He has spent as much as $160,000 a year in advertising, has treated almost a thousand patients a week on a pay-as-you-enter basis, and has heard $40,000 a month clink into his cash register. At present, unhappily for mankind, Dr. Landis is suffering an investigation by the State Board of Medical Examiners. But he is not worried. He said recently:

> It's the money that counts. I can sign my name to a note for $150,000 any day. We treat up to 4,000 patients a month here and the ethical medicoes can have my license on a silver platter. The House of Health will go on just the same.

Dr. Landis has gone as far as to write a book of advice to the medical profession. In it he reveals that among the notable posts he has held are those of examining physician of the Order of Pythias and Ladies of the Golden Star, chief examiner to the Order of Independent Sons, and surgeon to the Panama Railroad Company. He tells hs fellow physicians that "the size of your fees depends more on your business ability than on your professional skill." The business man advertises, he points out, and the physician should do likewise. Advertising, however, still arouses criticism and the doctor who uses it must be above suspicion. He warns his fellows:

> The troubles and persons of their women patients should be regarded more sacredly by the profession than they are even by the priest of the confessional:—and this not from any specially angelic point of view, but from a sensible business point of view.

Meanwhile the medical schools throughout the country continue to send a large proportion of their graduates to New York. Having acquired a second-hand set of tools, and a nurse for the outer office either by matrimony or the classified columns, these ambitious young men attempt to make a living. For years they have a pretty thin time. Patients are scarce when the beginner declines to split fees or to make extravagant promises. It is not remarkable, perhaps, that when business finally picks up he cashes in with slight regard for the pocketbooks of his patients. Meanwhile, a new school of quackery is developed almost daily. One method loses favour with the public and another is introduced. The violet ray experts give way to the spectroscopic healers. The chiropractors do a little additional studying and set themselves up as plastic surgeons. All that is necessary is a high-sounding name, and a new school of medicine is born. The New Yorker with a tummyache is not to be envied.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Royal North Shore Hospital, St. Leonard's, Sydney, on August 11, 1927. The meeting took the form of a series of demonstrations by the members of the honorary staff.

Jacksonian Epilepsy.

DR. F. GUY GRIFFITHS showed a patient who was suffering from Jacksonian epilepsy (see page 370).

Hodgkin's Disease.

Dr. Griffiths also showed a male patient, aged sixteen years, who had been shown at two previous meetings of the Branch. In the first instance the patient had manifested considerable enlargement of the liver, spleen, cer-

vical, axillary and inguinal glands. The diagnosis of Hodgkin's disease had been confirmed by microscopical examination of a gland removed for the purpose. Improvement had been effected by the administration of arsenic and iodide of potash (see THE MEDICAL JOURNAL OF AUSTRALIA, January 17, 1925). When the patient was shown at a meeting in September, 1925, he had been very ill and emaciated and had suffered from weakness and enlarged lymphatic glands with high fever and bronchopneumonic patches in the lung (see THE MEDICAL JOURNAL OF AUSTRALIA, January 30, 1926). Dr. Griffiths said that the patient was comparatively well and was being shown to demonstrate the results of treatment. For two years he had been taking three times a day a mixture containing 0·3 gramme (five grains) of iron and ammonium citrate, 0·12 mils (two minims) of Fowler's solution and 0·12 gramme (two grains) of iodide of potash in each dose.

Pernicious Anæmia.

Dr. Griffiths also showed a patient who was suffering from pernicious anæmia. A report of this case will be published in a subsequent issue.

Familial Infantile Anæmia.

Dr. Griffiths's last patient was suffering from a familial form of infantile anæmia. A report of this case will be published in a subsequent issue.

Rheumatoid Arthritis.

DR. R. S. E. TODD showed a female patient, aged thirty-five years, who had been admitted to hospital on October 22, 1926, complaining of pain in the back, in the shoulders and knees of five years' duration. The pain had commenced shortly after the extraction of a tooth. On admission the patient had been three months pregnant. Tenderness and limitation of movements of the shoulder, elbow and knee joints had been present, as well as slight periarticular swelling of the right knee. X ray examination of the knee joints had revealed early osteoarthritic changes. The teeth had been normal, no sign of periapical sepsis being present. The tonsils had been infected and had been removed on October 29, 1926. No other septic focus had been discovered in the ear, nose or throat. On December 3, 1926, a cystoscopic examination had been carried out and a pyelogram had revealed an infected hydronephrosis with a kink of the ureter. Nephropexy had been performed on December 14, 1926, and the urinary infection had cleared up. The gonococcal fixation test had yielded no reaction. The patient had been confined on April 1, 1927. Following this all tests for a focus had been repeated. The teeth and the urinary tract had been normal. No abnormal flora had been discovered in the stools. A smear from the cervix had yielded diphtheroids and Gram-negative coliform bacilli. The Casoni test for hydatid disease had yielded no reaction and blood culture had been sterile. A hæmolytic streptococcus had been isolated from the throat in pure culture.

Dr. Todd pointed out that since her admission the patient's condition had progressively become worse. She had intermittent fever continuously and suffered from great pain in her various joints. The periarticular swelling had increased and involved the wrists and the smaller joints of the hands. She was unable to walk without assistance. She had been treated with diathermy, hot air and massage. Medication had included salicylates, iodide of potash, thyreoid extract and potassium permanganate enemata. At the time of demonstration she was taking "Dimol."

Probable Hodgkin's Disease.

DR. C. W. SINCLAIR showed a male child, aged six and a half years, who had been admitted to hospital on June 6, 1927. The patient had suffered from a sore throat two months prior to admission and had been in hospital for ten days on that account. Since then he had been very pale and generally lacking in energy. On admission his face had been puffy and covered with a patchy erythematous rash. *Impetigo contagiosa* of the lips and right cheek had been present. The tonsils had been large and infected and numerous glands had been palpable in the posterior triangles of the neck. The abdomen had been distended. The heart and lungs had been clear and the urine normal. A blood count had yielded the following findings:

Erythrocytes, per cubic millimetre ..	1,595,000
Hæmoglobin value	25%
Leucocytes, per cubic millimetre ..	8,125
Polymorphonuclear cells	56·5%
Lymphocytes	43·5%

The cells had manifested variations in size, shape and staining. X ray examination of the chest and of the accessory sinuses had revealed no abnormality. Von Pirquet's test had yielded no reaction. No blood had been found in the stools. No reaction had been obtained to the Wassermann and Kahn tests. Nothing abnormal had been found in the deposit from the urine and a "second glass" specimen of urine had been sterile on culture.

On June 20, 1927, the temperature had risen for the first time to 38·3° C. (101° F.) and since then it had been irregular. It had frequently been in the neighbourhood of 39·4° C. (103° F.). Slight tenderness had been present over both tibiæ and some œdema had been present in both legs. A leucocyte count had yielded the following results:

Leucocytes, per cubic millimetre	7,500
Polymorphonuclear cells	38%
Lymphocytes	61%
Eosinophile cells	1%

On June 23, 1927, the tenderness had disappeared from the tibiæ, but the temperature had still been elevated. On June 30, 1927, a blood count had yielded the following results:

Erythrocytes, per cubic millimetre ..	1,690,000
Hæmoglobin value	25%
Colour index	0·65
Leucocytes, per cubic millimetre ..	5,625

The leucocytes had been in normal proportion. The red cells had manifested slight irregularity in size, shape and staining. No nucleated red cells had been seen. A transfusion of three hundred cubic centimetres of blood had been made from a suitable donor.

On July 8, 1927, tonsillectomy and adenoidectomy had been performed. This had been followed by a severe reaction, the temperature rising to 39·8° C. (103·8° F.) and the pulse rate to 160. For almost a week the patient had seemed to improve, the temperature remaining almost normal.

On July 13, 1927, a blood count had yielded the following information:

Erythrocytes, per cubic millimetre ..	1,780,000
Hæmoglobin value	25%
Colour index	0·6
Leucocytes, per cubic millimetre ..	7,250
Polymorphonuclear cells	45%
Lymphocytes	55%

The red cells had manifested slight irregularity in size, shape and staining. An occasional normoblast had been seen. On July 23, 1927, the temperature had risen again and an abscess had formed at the apex of one of the patient's left upper temporary molar teeth. Under ether anæsthesia six teeth had been extracted.

On July 29, 1927, a blood count had been as follows:

Erythrocytes, per cubic millimetre ..	970,000
Hæmoglobin value	14%
Colour index	0·7
Leucocytes, per cubic millimetre	6,875
Polymorphonuclear cells	41%
Lymphocytes	58%
Eosinophile cells	1%

The red cells had manifested considerable irregularity in size, shape and staining. A few normoblasts had been seen, but no megaloblasts. On August 1, 1927, a further transfusion of one hundred cubic centimetres of blood had been given. Medication had been carried out by iron and arsenic, iodide of potash, antidiphtheritic serum given orally, and cod liver oil. At the time of demonstration the glands in the axillæ and groin were increasing in size.

Fracture of the Femur: Delayed Union.

DR. F. W. DOAK showed a male patient, aged forty-four years, a painter, who had been knocked down by a motor cycle on February 16, 1927. Fracture of the right femur

had resulted. The leg had been put up on a Thomas splint and Schmerz hooks had been inserted into the condyles of the femur and 7·6 kilograms (seventeen pounds) extension had been applied. X ray examination had revealed a comminuted fracture of the femur in the middle third in good position. Examination of the patient had revealed some carious teeth and thickened arteries, but no other abnormality. On March 31 the hooks and the splint had been removed and the limb put between sandbags. On April 4 some movement had been detected at the site of fracture and the limb had been put on a long Liston splint. On the following day X ray examination had revealed that the position was not so good and that slight outward and backward displacement of the lower fragment was present. On April 7 the limb had again been put on a Thomas splint with Schmerz hooks and nine kilograms (twenty pounds) extension. On April 23 the weight of the extension had been reduced by half. On May 14 the limb had been put on a long Liston splint and had appeared to have some union. On June 1 hot air and massage had been given. On June 3 slight lateral angulation of the femur had been noticed and on June 10 there had been considerable outward and backward angulation at the site of fracture. There had been no definite bony union, but some bony callus. On June 11 the patient had been given thyreoid extract and a diet containing much nucleo-protein. On July 24 some union had appeared to be present. The hot air, massage and passive movement had been continued, the long Liston splint had been removed. Much bony callus had been present. On July 28 good union had been reported. On August 4 the patient had walked with the aid of a walking calliper. According to an X ray examination made two days before the meeting considerable bony callus was present with a moderate amount of bony union. Dr. Doak pointed out that several estimations of the calcium and phosphorus content of the patient's blood had been made at intervals of one, eleven, twenty-one and twenty-nine days after the fracture. The results had been, if anything, somewhat higher than those for normal people.

Carcinoma of the Femur.

DR. H. S. CAPPER showed a male patient, aged forty-three years, a clerk, who had been admitted to hospital on August 8, 1927. He complained of pains in the left hip and groin of two months' duration. The onset had been sudden and the pain was gradually becoming worse. It was relieved by rest, but was at times so bad that he could not work. Inquiry into his previous history revealed that all his teeth had been removed one year previously on account of pyorrhœa and that he had suffered from asthma in childhood. He had lived for some years in sheep country. His mother suffered from what was regarded as malignant disease of the bowel. On examination the patient's cardio-vascular, respiratory, urinary and nervous systems were normal. Tenderness was present in the left thigh on deep pressure and a swelling was present below and behind the greater trochanter. The muscles of the left thigh and buttock were somewhat wasted. No pain was occasioned by full flexion of the knee and hip, but pain was caused by extension of the knee. There was no limitation of abduction or adduction and circumduction was limited laterally by pain which was described as being in the bone. Some roughness could be felt on movement of the joint. The patient had been examined by X rays and the radiologist had reported the presence of extensive bony destruction of the upper third of the left femur without involvement of the head. There was considerable increase in density of the whole pelvis involving the sacrum and the fourth lumbar vertebra with little if any new bone formation. The X ray appearance suggested carcinoma of the upper end of the left femur with secondary deposits throughout the pelvis.

Charcot's Disease of the Knee Joint.

DR. E. BLIGH showed a female patient, aged forty-four years, a married woman, who had been admitted to hospital on May 28, 1927, with a history of having slipped and fallen that morning with her left leg twisted under her. The left knee had become intensely painful. The patient had suffered from "septic phlebitis" following child-birth eighteen years previously and a vein in the left thigh had been excised. Her menstrual periods had been regular and normal. She had suffered from slight dysmenorrhœa and leucorrhœa. She had had eight healthy children and no miscarriages. Examination on admission had revealed that the left leg was abducted, making an obtuse angle with the thigh; the leg was rotated internally and the upper end of the tibia was displaced medially to the lower end of the femur; the movements of the knee were painful and all the other systems were clear. An unsuccessful attempt had been made to reduce the dislocation under ether anæsthesia and the radiologist had reported that the knee joint was irregular and that the appearances were those of a Charcot's joint. On June 1 the joint had been opened under ether anæsthesia and a small quantity of thick, straw-coloured fluid evacuated. The joint surfaces had appeared healthy, except for one or two white spots on the cartilage of the lower end of the femur. A further attempt had been made to reduce the dislocation. The response of the patient's serum to the Wassermann test was "+++"; a response had also been obtained to Kahn's flocculation test. X ray examination had revealed that the dislocation of the upper end of the tibia was unreduced. The patient was receiving antisyphilitic treatment.

Pott's Disease.

Dr. Bligh also showed a man, aged twenty-five years, who had been admitted to hospital on April 24, 1925, with a history of pain in the right side of the back for two months. Swelling had been present in the right lumbar region for one week. On April 29, 1925, the swelling had been aspirated and sero-purulent fluid, sterile on culture, withdrawn; no tubercle bacilli had been found in the fluid. On May 14, 1925, the abscess had been incised and pus evacuated. No tubercle bacilli had been found, but *Staphylococcus albus* had been present. The abscess had been reopened on June 15, 1925. On July 28, 1925, X ray examination had revealed tuberculosis of the fifth lumbar vertebra chiefly on the right side. On November 6, 1925, the radiologist had reported increased involvement of both the fourth and the fifth lumbar vertebræ with increase in osteoarthritic changes in the joints above and below the fifth lumbar vertebra. By December 18, 1925, the pathological process had extended appreciably. On August 12, 1926, the radiologist had suggested that arrest of the disease had occurred and that bone regeneration was taking place. Dr. Bligh point out that since the last X ray examination the patient had been under observation in a private hospital. No evidence of tuberculosis had been found elsewhere and he had been treated with extension and plaster jackets and ordinary hygienic methods. He had also been taking "Tricalcine."

Sarcoma of the Bowel.

DR. E. M. HUMPHERY showed a male child, aged three years, who had been admitted to hospital on June 28, 1927, with the history that a small swelling had recently been noticed in the right inguinal region. It had been supposed that this swelling was due to hernia. A few days after admission a large, hard mass had been palpable in the abdomen. This had not been tender, it had been movable from side to side and a hard edge had been felt at the level of the umbilicus, extending across the abdomen. The mass had remained after the bowels were opened. Laparotomy had been performed under ether anæsthesia and a mass had been found in the transverse colon which was much thickened and enlarged for a length of about fifteen centimetres (six inches). A mass had also been present in the region of the right inguinal ligament and this had been palpable from both the inside of the abdomen and from the exterior. Dr. Humphery regarded the tumour as a sarcoma of the bowel with secondary deposits in the right inguinal region.

Psoas Abscess.

DR. E. D. CLARK showed a male patient, aged sixty-eight years, who complained of a swelling in the left groin of about seven months' duration. The swelling had been noticed three years previously when it was about the size of a pigeon's egg. It had disappeared, but had recurred following "strain at work." It had rapidly increased in

size and at the time of admission had been as large as an orange and had spread in a lateral direction. The patient had suffered five years previously from "rheumatism" affecting the small of the back. Two years after this a swelling, about the size of a pigeon's egg, had appeared on the spine. The patient was Australian born and had travelled the world as a sailor. He denied venereal infection. His father had died of senility at the age of eighty-nine and his mother had died in childbirth. One brother had died of "insidious kidney disease." One brother had died suddenly of "rheumatism of the heart" and three of his children were alive and well. The patient complained of some breathlessness on severe exertion. No œdema of the feet was present. He complained of slightmorning cough. He had not lost weight and manifested no urinary symptoms. On examination the heart was found to be normal. Dr. Clark pointed out that there was definite evidence of pulmonary involvement on the left side posteriorly in the form of subapical crepitations. In the right apex impaired resonance and crepitations were present.

Dr. Cotter Harvey had seen the patient and had suggested fixation with bearing points in the axillæ and on the iliac crests by a celluloid jacket or metal with ribs along the spine and a space left to receive the gibbus. The breath sounds were vesicular and broncho-vesicular in type at the right apex and numerous râles were scattered over both sides of the chest with few rhonchi. The tumour was situated at the level of the fourth lumbar vertebra and rose sharply to an apex. It was tender on depression. The upper two vertebræ appeared to have an anterior curvature. The abscess was the size of a small cricket ball and was situated over the femoral triangle of the left side. It was circumscribed, hard, brawny at the base and fluctuant on the surface. There was also a flat, cystic, fluctuant swelling on the anterior surface of the thigh below the inguinal ligament; there was no definite margin to the swelling. There was also a small tumour about "the size of a bird's egg" below the anterior superior spine of the ilium. The patient had been submitted to X ray examination and the radiologist had reported collapse of the third and fourth lumbar vertebræ with some destruction of the body of the fourth lumbar vertebra, probably tuberculous. Some mottling in each lung in the upper part suggested pulmonary tuberculosis. No tubercle bacilli had been found on examination of the pus and no organisms were seen on a film stained by the Gram method. The pus was sterile on culture. The tumour had been aspirated on August 7, 1927, and about sixty cubic centimetres (two ounces) of thick yellow pus had been removed.

Hysterectomy Complicated by a Blood Dyscrasia.

DR. J. L. T. ISBISTER made a further report on a patient whom he had shown on two previous occasions. She had undergone the operation of hysterectomy and was suffering from a blood dyscrasia. This case will be reported in full in a subsequent issue.

The "Sanocrysin" Treatment of Pulmonary Tuberculosis.

DR. W. COTTER HARVEY showed three patients, suffering from pulmonary tuberculosis, who had been treated by "Sanocrysin" (see page 369).

Infected Congenital Hydronephrosis.

DR. R. J. SILVERTON showed a patient, a girl, aged nine and a half years, who had been admitted to hospital on June 28, 1927. This patient had been ailing for six months. Her urine had had an offensive odour, she had suffered from frequency of micturition and enuresis, but had not complained of pain. On the child's admission to hospital no abnormality had been found, with the exception of the changes in the urine. A X ray examination for urinary calculus had been undertaken and a suspicious shadow had been found on the left side opposite the transverse process of the fourth lumbar vertebra. The pyuria had failed to respond to medicinal treatment and a cystoscopic examination had been made on July 5, 1927. Trabeculæ had been found in the bladder and the trigone had been inflamed and thickened. Ureteric catheters had been passed. The catheter on the left side had been introduced for a distance of 22·5 centimetres (nine inches) and the right for a distance of 17·5 centimetres (seven inches). The indigo-carmine test had then been performed and cloudy urine had been recovered from the left kidney while that from the right was clear. Urine from the bladder had contained pus cells and Gram-negative, coliform bacilli; the urine from the left ureter had contained the same organisms and urine from the right ureter had been clear. Silver nitrate solution had been introduced into the pelvis of the kidneys at regular intervals, but as the pyuria did not respond to this treatment a pyelogram of the left kidney had been made on July 26, 1927. The pyelogram which was demonstrated by Dr. Silverton showed that the left ureter was kinked and that the pelvis of the left kidney was dilated. The natural curve of the uretero-pelvic junction had been lost.

Dr. Silverton explained that with these findings surgical operation was indicated. He then proceeded to the operating theatre where he explored the left kidney. He demonstrated the several steps of the operation to those present and pointed out that the ureter was kinked just below the pelvis of the kidney. The ureter took a sigmoid curve and the kink was rendered permanent by a longitudinal band in which was running one of the blood vessels supplying the upper part of the ureter. The pelvis of the kidney was found to be dilated. He considered that in these circumstances the operation of nephrectomy should be performed. He completed this operation and demonstrated the various structures as they were exposed.

Cystoscopy.

Dr. Silverton also made several cystoscopic examinations. He explained the methods used and demonstrated several interesting lesions which he found.

Hallux Valgus.

DR. S. H. SCOUGALL showed a female patient on whom he had operated for *hallux valgus*. A report of this case will be published in a subsequent issue.

Spondylolisthesis.

Dr. Scougall also showed three patients on whom he had performed the operation of spondylolisthesis. These cases will be reported in a subsequent issue.

A Root Lesion of the Brachial Plexus.

Dr. Scougall's next patient was a woman, aged forty-five years, who had been seen in the out patients' department on February 24, 1927. About a week prior to this she had had removed from the anterior fold of the left axilla what appeared to the house surgeon to be a common tick. She had complained of pain in the left side of the chest, associated with local cellulitis at the site of puncture and of weakness and numbness in the left hand with some pain in the area of ulnar nerve distribution. The cellulitis had rapidly disappeared, but the paresis and loss of sensation had increased during the following weeks. She had then been referred to Dr. Stewart McKay and Dr. Scougall had learned from Dr. McKay that tick bite causes central respiratory involvement *et cetera*, but does not cause a separate peripheral lesion. Dr. McKay had ascribed the patient's condition to a cervical rib and Dr. Norman Royle had concurred in this view. A previous radiogram had not shown any cervical rib nor any enlargement of the transverse process, the latter being the common cause of pressure on the nerve roots. Dr. Rutherford Darling had also seen the patient. He had agreed tentatively that the lesion involved the eighth cervical and first thoracic nerve roots and had suggested the taking of a stereoscopic radiogram. Dr. Sear, however, had again forwarded a report of normality. At this stage the electrical reactions in the affected muscles had been tested; a feeble reaction had been obtained to faradism and a brisk response to galvanism, with K.C.C. > A.C.C.

Dr. Scougall said that he had then determined to explore the affected roots on the assumption that pressure was being caused by a band of fascia. This had been done on February 21, 1927. Easy access had been obtained on account of the type of the patient's physique, but no

fascial band had been found. A small blood clot, however, had been found lying directly over these nerve roots, but it had not appeared sufficiently extensive to cause any pressure. In Dr. Scougall's opinion the question arose of some trauma unrecognized at the time, such as a direct injury in the anterior triangle or a forcible depression of the shoulder. The patient had made an early and full recovery from the operation and had been discharged four weeks later.

Congenital Dislocation of the Hip.

Dr. Scougall also showed a child who was suffering from congenital dislocation of the hip. He said that there was nothing unusual about the case, but he showed the patient because no instance of the condition had occurred in the practice of the hospital for some two and a half years. He discussed the differential diagnosis of the condition and referred to Albee's statement that it was the commonest congenital dislocation and constituted from 1% to 2% of all orthopædic conditions; 88% of cases occurred in females.

Anterior Poliomyelitis.

Dr. Scougall's last patient was a male, aged eight years, who had been admitted to hospital in November, 1923, at the time of the outbreak of anterior poliomyelitis. Two other patients, admitted about the same time, had lived for less than a week and the paralysis of the patient demonstrated had been so general that a grave prognosis was given. For three or four weeks diaphragmatic movement had appeared to be the sole activity. He had not been able to speak and even movements of deglutition had been performed with difficulty and only after liquid food had been placed in the back of the mouth. For a period no movement of the eyelids had occurred. At the end of about two months the patient had been left with extensive paralysis of all four limbs and of the spinal musculature. Dr. Scougall pointed out that the long period of slow improvement with the affected muscles in the optimum position had been continued for two and a half years and that the masseuse had been helped in her reeducation by the placid temperament and intelligence of the patient. The patient had been able to bear weight in an extensive "walk about" apparatus only after one and a half years. On April 17, 1926, stabilization of the right foot had been performed by Dunn's method and on June 8, 1926, astragalectomy had been carried out on the left foot. On July 12, 1926, the tendons of both peronei muscles in the right leg had been transplanted into the *tendo Achillis*. Supracondylar osteotomy had been done on the left femur in order to secure stability of the knee by hyperextension.

Dr. Scougall pointed out that the important features of the case were the severity of the infection, the treatment extending over four years, the final incidence of paralysis so arranged as to make reconstruction most effective and the patient's ability to walk about without apparatus and to play at school. The patient would probably become a useful citizen instead of being a burden on his family or on the State.

Hysterical Habit Spasm.

DR. H. C. MCDOUALL showed a female patient, a married woman, aged twenty-one years, who was suffering from an hysterical habit spasm. The patient's father, aged fifty-three years, was still alive and her mother had died at the age of fifty-two of a "stroke" and of gangrene of the right leg. Her elder brother, one of triplets, had been feeble since birth; he suffered from chorea and right sided weakness. Two younger brothers were strong and healthy. The patient had been quite normal up to the age of fifteen years, when she had suffered from rheumatic fever. At the age of sixteen she had suffered from a "nervous breakdown" associated with a mental strain over a musical examination. Since then she had been of a very nervous disposition and subject to emotional fits of crying. For some time the patient had been troubled with a rapid and almost continuous spasm of the right hand and fingers; this had extended during the previous five months to the whole of the right side. There had been inability to hold any article in the right hand and at times a tightness of the tongue, making speech difficult. Dr. McDouall pointed out that the patient had exaggerated reflexes on the right side with patellar and ankle clonus and areas of anæsthesia on the right side.

Dementia Præcox with Parkinsonian Syndrome.

Dr. McDouall also showed a male patient, a single man, aged twenty-three years, who had been seen for the first time on September 1, 1926. The patient's family history was clear. He had been at school until he was fifteen years of age, his infancy and childhood had been healthy and he was a good scholar. He had been in the printing trade for four years but had had to give it up, as he found great difficulty in learning it. He had suffered from influenza in a severe form two years previously. His memory was bad, he had been much worse for the previous four months. He was very nervy and unable to sleep. He walked stiffly with a fixed expression and a shuffling gait. He had difficulty in rising from a sitting position. He had a good deal of tremor in his hands and was restless; he fidgeted his fingers all the time and had some tremor of the tongue. His pupils were equal and reacted to light and accommodation. The knee jerks were exaggerated. He was slow in his movement and took a long time to do anything, such as lacing his boots or washing himself. He was an enormous eater. He also had a tendency to repeat things which were said (echolalia).

Episcleritis.

DR. E. C. TEMPLE SMITH showed a female patient, aged fifty-four years, who was suffering from episcleritis. The patient had suffered from "rheumatoid arthritis" for two years. No investigation had been made into her condition and no treatment had been administered. About three months previously the eye had become red and sometimes painful on movement. Dr. Temple Smith pointed out that the congestion and œdema of the episcleral tissues were analagous to a synovitis of the rectus muscle sheaths. Episcleritis was always indicative of some septic focus and the presence of two patches of old chorioiditis was also suggestive of this.

THE SISTER MARSDEN TESTIMONIAL FUND.

THE following notice has been circulated among medical practitioners in New South Wales in connexion with the retirement of Sister Marsden from the Royal Hospital for Women, Sydney. Those practitioners who have worked with her, will no doubt desire to contribute to the testimonial.

On June 23 a meeting was held at the Australasian Trained Nurses' Association Club Room, Elizabeth Strcet, Sydney, to consider the best means of recognizing the splendid self-sacrificing work of Sister Marsden during the last thirty years, first at the Benevolent Asylum and later at the Royal Hospital for Women. It is no exaggeration to say that the popularity of the Royal Hospital for Women is in no small measure due to goodwill engendered by Sister Marsden's district work.

At the meeting it was intimated that Sister Marsden always wished to have a small home of her own on retiring from her present position. It was unanimously agreed that the sum of £1,500 should be raised to purchase such a home and subscriptions immediately invited for that purpose.

It was pointed out that the general public including many nurses and doctors were indebted to Sister Marsden for her skill, cheerfulness and devotion to duty and would readily respond to the call and show their appreciation in a practical manenr.

A large and representative general committee was formed, with power to add to their number. Many subscriptions and offers of help have been received.

You are cordially invited to give your active interest to this effort and to forward your subscription to the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

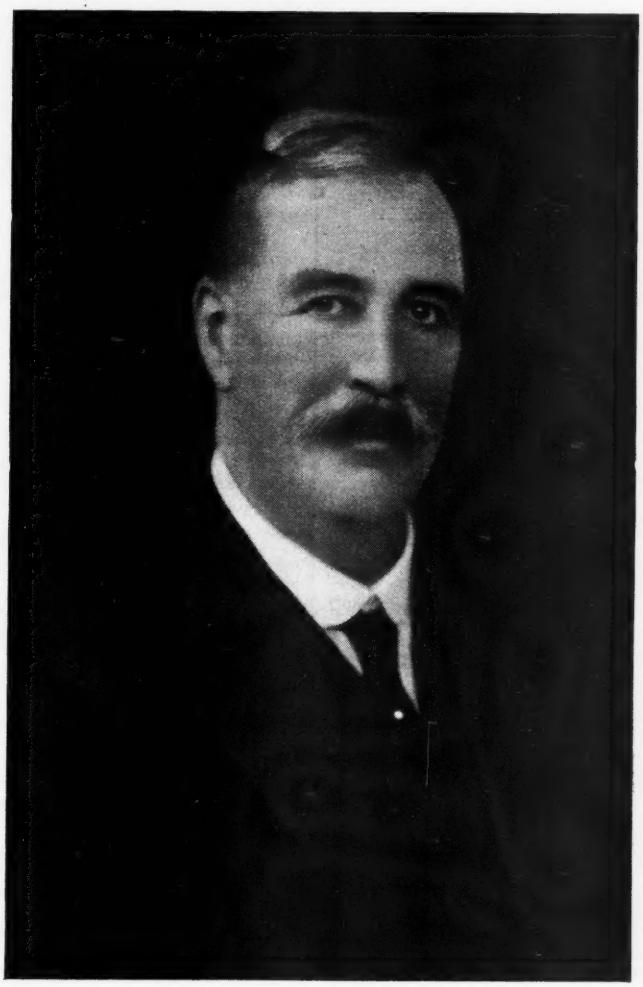
Yours, etc.,

QUEENIE SYMONDS, Honorary Secretary.
BESSIE S. FINDLAY, Honorary Treasurer.

Obituary.

EDWARD ALBERT OFFICER.

THE death of Dr. Edward Albert Officer which was announced in our issue of July 9, 1927, occurred with tragic suddenness on June 10, 1927. He had been at work as usual on that day and saw patients during his evening consultation hours at his rooms. Soon after he reached home he complained of pain in the left side of his chest and of dyspnœa. Medical assistance was given, but he grew rapidly worse and died within the hour, a victim to *angina pectoris*, the dread foe of so many medical practitioners.



Edward Albert Officer was born at Warrnambool, Victoria. He studied medicine at Melbourne University and graduated in 1897. He gained sixth place in his year and so earned a post as resident medical officer at the Melbourne Hospital. After a year's work at this institution he went in a similar capacity to the Children's Hospital where he stayed for two years. In later life he was particularly interested in the ailments of children and without doubt this was the result of his sojourn at Carlton. He went to Perth in 1901 as partner to the late Doctor Kenny and Doctor McWilliams and rapidly built up a large general practice which he conducted till the day of his death. He became Honorary Physician of the Perth Public Hospital, but when the Children's Hospital opened its doors, he resigned from the staff of the former in order to become Honorary Physician at the latter. He was interested not only in the treatment of his small charges, but was concerned for the welfare of the institution—for thirteen years he was a member of the Board of Management. He was Honorary Physician to Saint Vincent's Foundling Home and made attendance there a daily duty.

Edward Albert Officer was an active member of the Western Australian Branch of the British Medical Association. For thirteen years he was a member of the Council of the Branch. His opinion on matters of moment was freely sought and his advice was sound, for he had at heart the interests of his profession. In 1907 he filled the Presidential chair with distinction. His activities, however, were not limited by his own profession. He was for several years the guiding hand of the Western Australian Branch of the Australasian Trained Nurses' Association and he also had a long connexion with the Midwives' Board.

He was keenly interested in sport of all kinds and in his younger days was a prominent member of the famous Essendon football team at the time when Essendon boasted the premier football team in Victoria. In later years he was a prominent member of the Western Australian Turf Club and was Vice-Chairman at the time of his death.

His capacity for work was enormous and although he suffered for years from chronic arthritis of the hip, he never allowed this disability to interfere with his practice and grudged no amount of time or effort in the service of his patients.

The estimation in which he was held may be gauged by the attendance at his funeral. It was by far the largest ever witnessed in Western Australia with the possible exception of that of the the late Lord Forrest.

By his honesty and uprightness, his devotion to duty, his ready sympathy and his innumerable acts of kindness and helpfulness, his colleagues, friends and patients esteem him justly entitled to that highest of all eulogies: "Well done, good and faithful servant."

He leaves a widow and three children and to them his colleagues and friends tender their respectful sympathy.

DAVID ERNEST WILLIAMS.

WE announce with regret the death of Dr. David Ernest Williams which occurred at Fremantle, Western Australia, on August 26, 1927.

JAMES SAMUEL FREDERICK BARNET.

WE regret to announce the death of Dr. James Samuel Frederick Barnet which occurred at Armidale, New South Wales, on August 29, 1927.

Correspondence.

PYELITIS.

SIR: I was very interested in the report, in the journal of July 30 of the meeting of the New South Wales Branch of the British Medical Association where the subject of pyelitis came up for discussion.

Some time ago I had numbers of cases under my care in western Queensland. I can support the statement of Dr. Parker that there is a seasonal incidence and that there seems to be an infectivity. The reason I would offer for these facts is that the infection by the *Bacillus coli* is engrafted on a previous general infection which causes a spoiling of the kidney substance and a lowering of the resistance to invasion by the *Bacillus coli*. This is invariable in typhoid fever which I demonstrated while

pathologist at the Melbourne Hospital. The pyelitis is thus autogenous in type and it cloaks any coexisting or previous infection.

In my recent experience it was associated with an epidemic of scarlet fever which was often not detected, and which in nearly every case was not treated. The attack was acute with general œdema *et cetera*. The urine showed blood, pus and numerous active *Bacillus coli*. The symptoms due to nephritis subsided rapidly, but those due to the infection of the pelvis were very resistant to treatment. Intensive alkaline treatment was used, but in the chronic state at intervals of about a month a week of hexamin and acid sodium phosphate was given. I found great benefit from the use of autogenous vaccines.

Yours, etc.,

HAROLD CRAWFORD,
M.B., B.S. (Melb.).

Wickham House,
Wickham Terrace,
Brisbane,
August 22, 1927.

POST-GRADUATE TEACHING OR MAHOMET AND THE MOUNTAIN.

SIR: Medical men may be divided into two groups: (i) those who consider that their medical education is finished when they graduate; (ii) the remainder who are always students.

To the former group post-graduate teaching makes no appeal and this condition will prevail until an enlightened public demands that medical practitioners should go regularly for post-graduate instruction.

Of the latter group there are many who prefer to make of their leisure a "busman's holiday" such as Dr. Dunbar Hooper enjoys. On the other hand such recreation would cause many men to become as stale as Dr. Dunbar Hooper's friend the surgeon. Moreover, many country practitioners (and their families) require a complete change of occupation occasionally and in these days when expenses are high and competition over keen it is impossible for many men to take holidays and in addition enjoy the luxury of attending post-graduate courses.

Would it not be possible for the Federal Committee to organize and extend the scope of post-graduate teaching in Australia?

Recently Professor Windeyer, of Sydney, and Dr. Apperly, of Melbourne, visited Queensland to take part in the annual post-graduate course arranged by the Queensland Branch of the British Medical Association. The Ipswich, West Moreton and Downs and South Western Medical Associations secured the services of Dr. Apperly so that in all one hundred medical men in Queensland availed themselves of the opportunity of obtaining post-graduate instruction. More should be done for the practitioners in the distant parts of the States.

It should be possible to arrange for lecturers to visit these parts.

The Commonwealth and State Governments might be prevailed upon to provide free transport. Again the parent Association might be induced to arrange that distinguished members of the profession should visit us at regular intervals for the purpose mentioned.

At the very least when well known masters like Sir Mayo Robson and Mr. Sherren do visit us on pleasure bent, a live subcommittee might enlist their services.

Should it be possible to organize post-graduate teaching in Australia, I do not know of anybody better qualified to make a success of such an undertaking than Dr. Dunbar Hooper.

Yours, etc.,

E. S. MEYERS.

Brisbane,
August 28, 1927.

Naval and Military.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Numbers 82, 85 and 89, of August 4, 11 and 25, 1927.

PERMANENT NAVAL FORCES OF THE COMMONWEALTH.

(SEA-GOING FORCES.)

Termination of Appointment.—The appointment of Surgeon Commander Charles Arthur Gayer Phipps is terminated on 22nd May, 1927, on reversion to the Royal Navy.

AUSTRALIAN MILITARY FORCES.

To be Honorary Physician to the Governor-General. — Colonel W. W. Giblin, C.B., V.D., Australian Army Medical Corps, 1st July, 1927.

To be Honorary Surgeon to the Governor-General.—Colonel R. M. Downes, C.M.G., V.D., Australian Army Medical Corps, 1st July, 1927.

Army Headquarters.

Major C. H. Kellaway, M.C., Australian Army Medical Corps, from the appointment of Assistant Director of Hygiene, 3rd District Base, is appointed Director of Hygiene, 1st August, 1927.

First Military District.

Australian Army Medical Corps.

The provisional appointment of Captain W. J. F. Douglas is confirmed.

To be Lieutenant-Colonel.—Major E. Culpin, 7th June, 1927.

Major A. B. Lilley is transferred (provisionally) from the Sydney University Scouts, 1st Division, and to be supernumerary to the establishment pending absorption, 1st May, 1927.

Award of the Colonial Auxiliary Forces Officers' Decoration. Australian Army Medical Corps Reserve.—Major A. J. MacDonald.

Second Military District.

Australian Army Medical Corps.

Lieutenant-Colonel P. Fiaschi, O.B.E., is transferred to the Unattached List, 1st July, 1927.

To be Majors.—Captains R. G. Woods and J. W. Farrar, O.B.E., 1st July, 1927.

To be Captain (provisionally) Supernumerary to the Establishment Pending Absorption.—Alfred Broughton Barry, 1st July, 1927.

Lieutenant A. F. Janes is transferred to the Australian Army Medical Corps Reserve, 14th July, 1927.

Lieutenant (provisionally) W. A. Conolly is transferred to the Australian Army Medical Corps Reserve and to be Honorary Lieutenant, 14th July, 1927.

Major W. H. Donald is appointed to command the 8th Field Ambulance, 1st July, 1927, *vice* Lieutenant-Colonel W. C. Grey, V.D., who relinquishes the command on 30th June, 1927, and is transferred to the Unattached List, 1st July, 1927.

The appointment of Major W. R. C. Beeston to command the 2nd Cavalry Field Ambulance is extended for a period of one year from 1st September, 1927.

Captain C. I. Davis is transferred to the Australian Army Medical Corps Reserve, 1st August, 1927.

Australian Army Medical Corps Reserve.

To be Honorary Captain.—Honorary Lieutenant A. R. S. Vickers, 1st July, 1927.

The undermentioned officers are retired: Honorary Captain F. C. Higgins, 6th July, 1927; Honorary Captain E. A. D'Ombrain, 21st July, 1927; Honorary Captain T. L. Pawlett, 31st July, 1927; and Honorary Captain F. C. S. Shaw, 6th August, 1927.

Award of the Colonial Auxiliary Forces Officers' Decoration. Australian Army Medical Corps.—Lieutenant-Colonel P. Fiaschi, O.B.E.

Third Military District.

District Base: Staff.

Major J. Dale, O.B.E., Australian Army Medical Corps, is appointed Assistant Director of Hygiene, District Base Headquarters, 1st August, 1927.

Australian Army Medical Corps.

The provisional rank of Lieutenant granted to J. M. Buchanan is terminated, 30th June, 1927.

To be Captain (provisionally).—Lieutenant E. A. Daley, 1st July, 1927.

To be Captains (provisionally) Supernumerary to the Establishment Pending Absorption.—James Mayo Buchanan, Wolfe Davis and Alan John Grange Mackay, 1st July, 1927.

Captain (provisionally) J. M. Buchanan is seconded whilst attending a post-graduate course abroad, 1st July, 1927.

Captains (provisionally) D. Berman and H. E. Pearce are brought on the authorized establishment, 1st July, 1927.

Major J. Dale, O.B.E., is transferred from the Unattached List, 1st August, 1927.

The provisional appointments of Captains C. F. Macdonald and A. H. Green are confirmed; the provisional appointment of Captain S. A. McKenzie is terminated, 21st July, 1927.

To be Captain (provisionally).—Stanley Arnold McKenzie, 22nd July, 1927.

Australian Army Medical Corps Reserve.

To be Honorary Captains.—Honorary Lieutenants I. H. Cowling and J. J. Searby, 1st July, 1927.

To be Quartermaster and Honorary Lieutenant.—Second Lieutenant C. B. W. Smith, from the General List of the Reserve of Officers, 15th August, 1927; Quartermaster and Honorary Lieutenant C. B. W. Smith is granted the honorary rank of Captain (temporarily) whilst employed on duty at Army Headquarters, 15th August, 1927.

Lieutenant-Colonel E. B. Allan is placed upon the Retired List, with permission to retain his rank and wear the prescribed uniform, 24th August, 1927.

Award of the Colonial Auxiliary Forces Officers' Decoration.

Australian Army Medical Corps.—Lieutenant-Colonel J. A. H. Sherwin.

Fourth Military District.

District Base: Staff.

Major H. P. Brownell, D.S.O., Australian Army Medical Corps, is appointed Assistant Director of Hygiene, District Base Headquarters, 1st July, 1927, *vice* Major L. W. Jeffries, D.S.O., O.B.E., who relinquishes the appointment on 30th June, 1927.

Australian Army Medical Corps.

Major L. W. Jeffries, D.S.O., O.B.E., is appointed to command the 3rd Field Ambulance, 1st July, 1927, *vice* Major H. P. Brownell, D.S.O., who relinquishes the command on 30th June, 1927.

To be Lieutenant-Colonels.—Majors L. W. Jeffries, D.S.O., O.B.E., and R. L. Kenihan, M.C., 1st July, 1927.

Australian Army Medical Corps Reserve.

Colonel C. L. Strangman is placed upon the Retired List, with permission to retain his rank and wear the prescribed uniform, 1st August, 1927.

Honorary Captain W. J. Gregerson is retired, 29th July, 1927.

Captain R. F. Matters is transferred from the Australian Army Medical Corps Reserve, 2nd Military District, 1st July, 1927.

Fifth Military District.

District Base: Staff.

Major W. E. Blackall, Australian Army Medical Corps, is appointed Assistant Director of Hygiene, District Base Headquarters, 1st July, 1927.

Australian Army Medical Corps.

The provisional appointment of Lieutenant T. B. Seed is terminated, 30th June, 1927.

To be Captain (provisionally) Supernumerary to the Establishment Pending Absorption.—Honorary Lieutenant T. B. Seed, from the Australian Army Medical Corps Reserve, 1st July, 1927.

To be Major.—Captain W. E. Blackall, 1st July, 1927.

Captain (provisionally) J. J. Hough is transferred to the Australian Army Medical Corps Reserve and to be Honorary Captain, 2nd August, 1927.

Australian Army Medical Corps Reserve.

To be Honorary Captain.—Harley Edward Stevens, 22nd June, 1927.

To be Honorary Captains.—Honorary Lieutenants C. W. Anderson and B. W. Nairn, 1st July, 1927, and Frederick Harry Uther Baker, 18th July, 1927.

Lieutenant H. C. Meathrel is appointed from the Retired List, 4th Military District, and to be Honorary Captain, 1st August, 1927.

Honorary Captain A. Webster is retired, 7th August, 1927.

Sixth Military District.

Australian Army Medical Corps.

Major C. G. Thompson is transferred to the Australian Army Medical Corps Reserve, 1st July, 1927.

Books Received.

JOSEPH, BARON LISTER: CENTENARY VOLUME 1827-1927. Edited for the Lister Centenary Committee of the British Medical Association, by A. Logan Turner, M.D., LL.D. (Edinburgh); 1927. Crown 4to., pp. 197, with illustrations. Price 10s. 6d. net.

A SYNOPSIS OF SURGERY, by Ernest W. Hey Grooves, M.S., M.D., B.Sc. (London), F.R.C.S. (England); Eighth Edition; 1927. Bristol: John Wright and Sons, Limited. Crown 8vo., pp. 680, with illustrations. Price: 17s. 6d. net.

Diary for the Month.

SEPT. 13.—Tasmanian Branch, B.M.A.: Branch.
SEPT. 13.—New South Wales Branch, B.M.A.: Ethics Committee.
SEPT. 14.—New South Wales Branch, B.M.A.: Nomination of Candidates for Federal Committee.
SEPT. 14.—Central Medical Association, New South Wales.
SEPT. 19.—New South Wales Branch, B.M.A.: Organization and Science Committee.
SEPT. 20.—Tasmanian Branch, B.M.A.: Council.
SEPT. 20.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
SEPT. 21.—Western Australian Branch, B.M.A.: Branch.
SEPT. 21.—Section of Obstetrics and Gynæcology, New South Wales Branch, B.M.A.
SEPT. 23.—Queensland Branch, B.M.A.: Council.
SEPT. 23.—South Eastern Medical Association (Wollongong), New South Wales.
SEPT. 23.—Illawarra Suburbs Medical Association, New South Wales.

Medical Appointments.

Dr. William Arnold Graham (B.M.A.) has been appointed Certifying Medical Practitioner at Echuca, Victoria, under the provisions of the Workers' Compensation Acts.

* * * *

Dr. Owen Meredith Moulden (B.M.A.) has been appointed Honorary Gynæcologist to the Mental Hospital at Parkside, South Australia.

* * * *

Dr. Eugene Abraham Matison (B.M.A.) has been appointed Honorary Surgeon for Diseases of Ear, Nose and Throat to the Mental Hospital at Parkside, South Australia.

* * * *

Dr. Frederick Steele Scott (B.M.A.) has been appointed Honorary Dermatologist to the Mental Hospital at Parkside, South Australia.

* * * *

Dr. Otto Waldemar Mater (B.M.A.) has been appointed Government Medical Officer at Warren, New South Wales.

* * * *

Dr. Frederick Charles Rorke (B.M.A.) has been appointed Government Medical Officer at Port Kembla, New South Wales.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

ROYAL PRINCE ALFRED HOSPITAL, CAMPERDOWN, SYDNEY: Bacteriologist.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad *per annum* payable in advance.

Quality is of First Importance in Medicine

SEABURY'S

"Gold Cross" COTTON

IS a specially selected long fibre wool, beautifully white, carefully purified and thrice carded. Its great absorbent power is due to a special process to which it is subjected at the Seabury Pharmacal Laboratories. "Gold Cross" is a perfectly reliable cotton insuring thorough drainage of the wound surface

A Dressing Every Surgeon Should Know

Specify Seabury's "Gold Cross"

Supplied in Cartons containing—
1 oz., 2 oz., 4 oz., 8 oz. and 16 oz. nett weight of Cotton.

We invite your inquiries for

Medicated Plasters of All Descriptions
—
Surgical Dressings
—
Surgical Ligatures
—
Surgical and Dental Requisites

Prepared at the Seabury Pharmacal Laboratories by

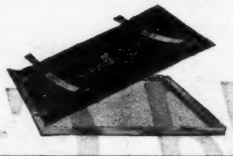
SEABURY & JOHNSON

Manufacturers of the World-Renowned
MEAD'S RUBBER ADHESIVE PLASTER

Sole Consignees for Australia and New Zealand:
FASSETT & JOHNSON, LTD.,
233 CLARENCE STREET, SYDNEY, N.S.W.
Telephone: CITY 2556-2557.
Telegrams: "PLASTERS, SYDNEY."
New Zealand: P.O. Box 33, Wellington.
London, England: 86 Clerkenwell Road.
South Africa: 15 Bree St., Cape Town.

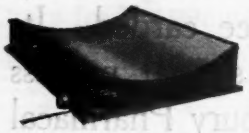
Watson

10 M. A. Radiator-Type Coolidge Tube



The Victor Cassette

How to Modernize an Old X-Ray Equipment



Victor Model Potter-Bucky Diaphragm

ONE of the greatest handicaps under which many X-ray laboratories are operating today is the attempt to produce good radiographic results with a too limited amount of accessory equipment.

This is especially true where the equipment has been in use for several years, as often-times the blame for inferior radiographic work is laid to "age of equipment," when as a matter of fact a new machine would show only a small improvement in the quality of work if the accessories so necessary to modern technic were not used. There are no doubt many existing X-ray equipments which offer years of usefulness, if by the addition of proper accessory equipment they are modernized.

Illustrated herewith are a few accessory items, one or more of which may prove to be all that is necessary to bring some present inadequate equipments up to the standard of present-day requirements for the highest quality of radiographic results.

Victor Stabilized X-Ray Timer

Victor-Kearsley Stabilizer

Victor Auto-Transformer Unit

Send for the May-June issue of "Service-Suggestions," which contains an interesting and instructive article on this subject.

W. Watson & Sons Ltd.

SYDNEY: 15, CASTLEREAGH STREET.
MELBOURNE: 117, COLLINS STREET.
BRISBANE: 357, QUEEN STREET.
WELLINGTON, N.Z.: 132, CUBA STREET.
AUCKLAND, N.Z.: 228, QUEEN STREET.
ADELAIDE: EVANS BUILDING, JAMES PLACE.
FACTORY: CARLTON, VICTORIA.

Wholly Set Up, Published and Printed at The Printing House, Seamer Street, Glebe, Sydney, N.S.W., by HENRY WILLIAM ARMIT, of The Point Road, Woolwich, Sydney, on behalf of THE AUSTRALASIAN MEDICAL PUBLISHING COMPANY, LIMITED, of 30-34, Elizabeth Street, Sydney.